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INTERNATIONAL INSTITUTE OF AGRICULTURE

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PART II

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OF
AGRICULTURAL ECONOMICS AND SOCIOLOGY

TABLE OF CONTENTS



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INTERNATIONAL INSTITUTE OF AGRICULTURE IN ALL COUNTRIES

CLASSIFICATION OF THE SUBJECTS

I. -- *Co-operation.*

- I..... CO-OPERATION IN GENERAL, OR OF VARIOUS KINDS.
- II..... LEGISLATION AND JURISPRUDENCE.
- III..... INTERVENTION OF THE STATE AND OF PUBLIC AUTHORITIES.
- IV. STATISTICS.
- V..... CENTRAL, OR REGIONAL, INSTITUTIONS OR FEDERATIONS HAVING VARIOUS OBJECTS.
- VI..... INSTITUTIONS SUPPLYING CREDIT TO CO-OPERATIVE SOCIETIES.
- VII..... CO-OPERATIVE SOCIETIES ENGAGED IN THE PURCHASE OR SUPPLY OF AGRICULTURAL REQUISITES.
 - (1) Societies confining themselves to the purchase of agricultural requisites.
 - (2) Societies engaged in the purchase of agricultural requisites and in working up the requisites purchased.
- VIII... . CO-OPERATIVE CREDIT SOCIETIES.
- IX. CO-OPERATIVE SOCIETIES FOR FACILITATING THE PRODUCTION CARRIED ON BY THE MEMBERS.
- X..... CO-OPERATIVE SOCIETIES ENGAGED IN THE SALE, OR IN OPERATIONS PRELIMINARY TO THE SALE, OF AGRICULTURAL PRODUCE.
 - (1) Societies confining themselves to the sale of agricultural produce.
 - (2) Societies engaged in production or in working up produce with view to sale.
- XI..... CO-OPERATIVE SOCIETIES FOR THE ACQUISITION AND CULTIVATION OF LAND OR FOR THE EXECUTION OF AGRICULTURAL WORKS.
- XII..... CO-OPERATIVE EDUCATION.
- XIII..... MISCELLANEOUS INFORMATION CONCERNING AGRICULTURAL CO-OPERATION.
- XIV..... CO-OPERATIVE CONGRESSES.

II. -- *Association.*

- I..... ASSOCIATION IN GENERAL.
- II..... LEGISLATION AND JURISPRUDENCE.

- III..... INTERVENTION OF THE STATE AND OF PUBLIC AUTHORITIES.
- IV..... STATISTICS.
- V..... SEMI-OFFICIAL, AGRICULTURAL, ORGANISATIONS AND THE OFFICIAL REPRESENTATION OF THE AGRICULTURAL CLASSES.
- VI..... ASSOCIATIONS FOR THE PROTECTION OF THE GENERAL INTERESTS OF AGRICULTURISTS.
- VII..... ASSOCIATIONS FOR FURTHERING THE TECHNICAL PROGRESS OF AGRICULTURE.
- VIII..... AGRICULTURAL WORKERS' UNIONS AND EMPLOYERS' UNIONS.
- IX..... OTHER AGRICULTURAL ASSOCIATIONS OR ORGANISATIONS.

{III. — *Insurance and Thrift.*

- I..... INSURANCE IN GENERAL, OR OF VARIOUS KINDS.
- II..... LEGISLATION AND JURISPRUDENCE.
- III..... INTERVENTION OF THE STATE AND OF PUBLIC AUTHORITIES.
- IV... STATISTICS.
- V..... INSURANCE OF PERSONS :
 - (1) Insurance against illness.
 - (2) Insurance against accidents.
 - (3) Insurance against unemployment and insurance of employers against strikes.
 - (4) Insurance against invalidity and old age
- VI..... INSURANCE OF THINGS :
 - (1) Insurance against fire.
 - (2) Insurance against mortality of live stock.
 - (3) Insurance against hail, floods and drought.
- VII..... MISCELLANEOUS INFORMATION CONCERNING INSURANCE.

IV. — *Credit.*

- I..... NON-CO-OPERATIVE CREDIT AND MORTGAGE INDEBTEDNESS.
- II..... LEGISLATION AND JURISPRUDENCE.
- III..... INTERVENTION OF THE STATE AND OF PUBLIC AUTHORITIES.
- IV..... STATISTICS
- V..... BANKS AND SAVINGS BANKS AS SOURCES OF CREDIT.
- VI..... MORTGAGE CREDIT
- VII..... AGRICULTURAL CREDIT.
- VIII..... MISCELLANEOUS INFORMATION CONCERNING NON-CO-OPERATIVE CREDIT.

V. — *Agricultural economy in general.*

- I..... LAND PROPERTY AND AGRICULTURAL ECONOMY IN GENERAL.
- II... LEGISLATION AND JURISPRUDENCE.
- III..... PUBLIC ADMINISTRATIVE BODIES IN CONNECTION WITH AGRICULTURE.

IV..... LAND SYSTEMS :

- (1) The public lands.
- (2) The ownership, inheritance and division of land.
- (3) Land registers and the transfer of ownership.
- (4) The distribution of large, medium and small holdings.
- (5) Different forms of land tenure.
- (6) Agricultural colonization.
- (7) The creation of small holdings.
- (8) Reclamation of land and settlement of reclaimed land.
- (9) Conservation of small holdings : inalienable family properties.
- (10) Excessive subdivision and consolidation of holdings.
- (11) Agrarian reform in general.
- (12) Allotments.

V..... AGRICULTURAL POLICY :

- (1) Agriculture and taxation.
- (2) Measures to increase production.
- (3) Agricultural reconstruction.

VI..... FARM ACCOUNTANCY, FARM ECONOMICS AND GENERAL CONDITIONS OF AGRICULTURE.

VII..... SCIENTIFIC MANAGEMENT IN AGRICULTURE.

VIII..... AGRICULTURAL INDUSTRIES AND TRADES.

IX..... THE DISTRIBUTION OF FOODSTUFFS AND THE MEASURES TO COMBAT EXCESSIVE PRICES AND FRAUD.

X..... ECONOMIC FLUCTUATIONS IN AGRICULTURE.

XI..... ECONOMIC AND SOCIAL CONDITIONS OF THE AGRICULTURAL CLASSES :

- (1) Agricultural labour.
- (2) The conditions of rural life and measures for improving them and combating rural depopulation.
- (3) Farm household management.

XII..... ECONOMIC AND SOCIAL CONGRESSES, EXHIBITIONS, ETC.

TABLE OF CONTENTS

A. — BY SUBJECTS

I.

CO-OPERATION.

I. — CO-OPERATION IN GENERAL, OR OF VARIOUS KINDS.

Irish Free State : Agricultural Co-operation in the Irish Free State, 12, 373-384.
— *Spain* : A New Impulse to Co-operation in Spain, 8, 287-289

II. — CO-OPERATIVE CREDIT SOCIETIES.

Finland : The Co-operative Rural Bank Movement in Finland, 7, 233-240.

III. — CO-OPERATIVES ENGAGED IN THE SALE, OR IN OPERATIONS PRELIMINARY TO THE SALE OF AGRICULTURAL PRODUCE.

(1) Societies confining themselves to the sale of agricultural produce.

Argentina : Co-operative Elevators in Argentina, 11, 365-366. — *Australia* : Produce Pools in Australia, 5, 174-181. — *United States* : (1) The Basis of Payment for Produce in Co-operative Marketing Associations in the United States, 2, 41-48 ; (2) Co-operative Marketing Associations in the United States, 12, 385-391.

(2) Societies engaged in production or in working up produce with view to sale.

France : Co-operative Wine-making in France, 11, 359-365.

II.

ASSOCIATION.

I. — SEMI-OFFICIAL AGRICULTURAL ORGANISATIONS AND THE OFFICIAL REPRESENTATION OF THE AGRICULTURAL CLASSES.

Peru : Compulsory Agricultural Societies in Peru, 11, 367-368.

II. — ASSOCIATIONS FOR FURTHERING THE TECHNICAL PROGRESS OF AGRICULTURE.

Spain : Association and Co-operation in Livestock Farming in Spain, 10, 346-350.

III

INSURANCE AND THRIFT.

I. — INSURANCE OF PERSONS.

Austria : Insurance of Farm Workers in Austria, by *Dr. Otto Siegel*, 1, 10-21.

IV

CREDIT

I. — AGRICULTURAL CREDIT

Argentina : Agricultural Credit in the Argentine Republic, 5, 181-186 — *Bulgaria* : The Agricultural Bank of Bulgaria, by *Ivan Mihailoff*, Deputy Chief of the Agricultural Bank of Bulgaria, 6, 218-224 — *British India* : Agricultural Credit in India : Rural Credit in Bihar and Orissa, 10, 337-345. — *France* : Forms and Development of Agricultural Credit in France, 9, 314-317. — *New Zealand* : Rural Intermediate Credit in New Zealand, 1, 8-10 — *Spain* : Present Position of Agricultural Credit in Spain, 4, 130-137. — *Uruguay* : Development of Agricultural Credit in Uruguay, 8, 284-287.

II. — MORTGAGE CREDIT.

Italy : The National Consortium for Agricultural Improvement Credit in Italy, 10, 332-337.

V.

AGRICULTURAL ECONOMY IN GENERAL

I. — LAND PROPERTY AND AGRICULTURAL ECONOMY IN GENERAL.

Spain : Land Values and Agricultural Wealth of Spain, 3, 101-105. — *Switzerland* : Market Gardening in Switzerland : Its Present Position and Economic Importance, by *P. Chavan*, *Agric. Engineer*, 7, 250-255.

II. — LAND SYSTEMS.

(1) Different forms of Land Tenure.

Brazil : Official Enquiry on Land Values, Rents and Emphyteusis Charges in Brazil, 4, 117-130.

(2) Reclamation of Land and Settlement of Reclaimed Land.

Union of South Africa : Irrigation and Settlement of Irrigated Land in the Union of South Africa, by *R. J. van Reenen*, 1, 1-7 and 2, 48-54.

(3) Excessive Subdivision and Consolidation of Holdings.

Germany : Present Situation of Consolidation Operations in Prussia (*), 8, 273-280.

(4) Agrarian Reform in general.

Czechoslovakia : Agrarian Reform in Czechoslovakia, by Antonin Pavel, Ministerial Advisor to the State Land Office, 8, 265-273. -- *Poland* : Agrarian Reform in Poland (**), 5, 157-174 and 6, 202-218.

III. — AGRICULTURAL POLICY.

Chile : Measures of Agricultural Policy in Chile, 9, 309-313.

IV. — FARM ACCOUNTANCY, FARM ECONOMICS AND GENERAL CONDITIONS OF AGRICULTURE.

International : Terms used in Farm Accounting, 4, 147-153. — *Australia* : (1) Economics of Small Mixed Farming in Australia, 1, 25-29 ; (2) Certain Factors in Production Costs of Wheat in South Australia, 7, 241-250. — *Canada* : Farming Costs in Eastern Canada, 9, 300-309. — *Danemark* : Book-keeping Results in Danish Agriculture in 1928-29, 2, 54-57. — *Germany* : (1) Utilisation of the Cereal Crop in Germany, 6, 227-229 ; (2) Proportionate Contribution of the different Size Groups of Farms in Germany to the Market Supply, 9, 297-300. — *Netherlands* : Accountancy Offices in the Netherlands and Some Accountancy Results for 1927-28 and 1928-29, 5, 186-191. — *New Zealand* : Dairy Farm Management in New Zealand, 4, 140-147. — *Nyasaland* : Agricultural Development in Nyasaland, 8, 280-284. — *Scotland* : The Potato Growing Crisis in Scotland, 3, 105-108. — *Switzerland* : The Extension of Cereal Cultivation in Switzerland, 3, 108-109. — *United States* : (1) Income from Agricultural Production in the United States, 1, 29-30 ; (2) Returns from Farms Operated by Owners in the United States, 1, 30-33.

V. — AGRICULTURAL INDUSTRIES AND TRADES.

Czechoslovakia : Number of industrial and agricultural enterprises in Czechoslovakia, 11, 368-369. — *France* : Sugar Beet Selling Agreements, 2, 68-71. — *Latvia* : The Problem of the grain Monopoly in Latvia, 1, 21-25. — *Switzerland* : Fruit growing in Switzerland and the New Alcohol Regulations, 6, 224-226. — *Yugoslavia* : The Privileged Company for the Export of Agricultural Products in Yugoslavia, 12, 391-395.

VI. — ECONOMIC AND SOCIAL CONDITIONS OF THE AGRICULTURAL CLASSES.

(1) Agricultural labour.

Latvia : Hours of Work in Agriculture in Latvia, by Peters Starcs, Professor at the University of Latvia, 11, 353-359.

(*) Report placed at the disposal of the Institut by the Prussian Ministry of Agriculture, Lands and Forests, as a reply to a questionnaire on the subject.

(**) Reports sent by the Government in reply to an Enquiry on Agrarian Reform made by the International Institute of Agriculture.

- (2) The conditions of rural life and measures for improving them and for combating rural depopulation.

International : (1) Rural Housing, 3, 77-95 ; (2) The Country Women's Association Movement in Various Countries, 3, 96-100, 4, 147-139 and 7, 258-261 ; (3) Some Considerations on the Rural Exodus, 6, 197-201. — *Estonia* : Some Observations on the Rural Exodus in Estonia (*), 7, 255-261. — *Germany* : The Agricultural Crisis and its Effects on the Small Farming Class, by Prof. Dr. Münzinger, 10, 327-332. — *India* : Some Notes on the Problem of Rural Betterment in India, 2, 57-64. — *Switzerland* : The Rural Exodus in Switzerland, 2, 64-68.

BIBLIOGRAPHY ON ECONOMIC AND SOCIAL QUESTIONS.

Bibliography on Economic and Social Questions : 1, 33-34 ; 3, 109-110 ; 7, 261-263 ; 8, 289 ; 9, 318-321 ; 10, 350-351 ; 11, 369-370.

AGRICULTURAL LEGISLATION

United States Legislation on Agricultural Marketing 3, 110-114 — The New Tariff Legislation in the United States, 8, 290-293. — Summary of Laws and Regulations, 1, 34 ; 2, 71-72 ; 4, 154 ; 5, 191-193 ; 9, 321-325.

LIST OF BOOKS RECEIVED BY THE LIBRARY

Publicatlons received by the Library, 1, 34-40 ; 2, 73-76 ; 3, 114-116 ; 4, 154-156 ; 5, 193-196 ; 6, 229-232 ; 7, 263-264 ; 8, 294-296 ; 9, 325-326 ; 10, 351-352 ; 11, 371-372 ; 12, 395-396

(*) Based on data sent to the International Institute of Agriculture by M. J. Umarik, Chief of the Division of Agricultural Instruction in Estonia, in response to a questionnaire on the rural exodus.

B. — BY COUNTRIES

VARIOUS COUNTRIES.

Agricultural Economy in General : (1) Rural Housing, 3, 77-95 ; (2) The Country Women's Association Movement in Various Countries, 3, 96-100, 4, 137-139 and 7, 258-261 ; (3) Terms used in Farm Accounting, 4, 147-153 ; (4) Some Considerations on the Rural Exodus, 6, 197-201. — *Bibliography on Economic and Social Questions* : 7, 262, 11, 369.

ARGENTINA :

Co-operation : Co-operative Elevators in Argentina, 11, 365-366. — *Credit* : Agricultural Credit in the Argentine Republic, 5, 181-186.

AUSTRALIA :

Co-operation : Produce Pools in Australia, 5, 174-181. — *Agricultural Economy in General* : (1) Economics of Small Mixed Farming in Australia, 1, 25-29 ; (2) Certain Factors in Production Costs of Weath in South Australia, 7, 241-250. — *Bibliography on economic and social questions* : 7, 262.

AUSTRIA.

Insurance and Thrift : Insurance of Farm Workers in Austria, by Dr. Otto Siegel, 1, 10-21.

BELGIUM :

Bibliography on Economic and Social Questions : 1, 38

BRAZIL :

Agricultural Economy in General : Official Enquiry on Land Values, Rents and Emphyteusis Charges in Brazil, 4, 117-130. — *Bibliography on Economic and Social Questions* : 10, 351.

BULGARIA :

Credit : The Agricultural Bank of Bulgaria, by Ivan Mihailoff, Deputy Chief of the Agricultural Bank of Bulgaria, 6, 218-224.

CANADA :

Agricultural Economy in General : Farming Costs in Eastern Canada, 9, 300-309. — *Bibliography on Economic and Social Questions* : 1, 33-34.

CHILI :

Agricultural Economy in General : Measures of Agricultural Policy in Chile, 9, 309-313.

CHINA :

Bibliography on Economic and Social Questions : 11, 370.

CZECHOSLOVAKIA :

Agricultural Economy in General : (1) Agrarian Reform in Czechoslovakia, by Antonín Pavel, Ministerial Advisor to the State Land Office, 8, 265-273 ; (2) Number of industrial and agricultural enterprises in Czechoslovakia, 11, 368-369. — *Bibliography on Economic and Social Questions* : 3, 109-110 ; 11, 370.

DENMARK :

Agricultural Economy in General : Book-keeping Results in Danish Agriculture in 1928-29, 2, 54-57.

BRITISH COLONIES :

Bibliography on Economic and Social Questions : 9, 318-320.

ESTONIA :

Agricultural Economy in General : Some Observations on the Rural Exodus in Estonia (*), 7, 255-261.

FINLAND :

Co-operation : The Co-operative Rural Bank Movement in Finland, 7, 233-240.

FRANCE :

Co-operation : Co-operative Wine-making in France, 11, 359-365. — *Credit* : Forms and Development of Agricultural Credit in France, 9, 314-317. — *Agricultural Economy in General* : Sugar Beet Selling Agreements, 2, 68-71.

GERMANY :

Agricultural Economy in General : (1) Utilisation of the Cereal Crop in Germany, 6, 227-229 ; (2) Present Situation of Consolidation Operations in Prussia (**), 8, 273-280 ; (2) Proportionate Contribution of the different Size Groups of Farms in Germany to the Market Supply, 9, 297-300 ; (4) The Agricultural Crisis and its Effects on the Small Farming Class, by Prof. Dr. Münzinger, 10, 327-332. — *Bibliography on Economic and Social Questions* : 9, 320.

GREAT BRITAIN AND NORTHERN IRELAND :

Bibliography on Economic and Social Questions : 1, 33 ; 3, 109.

BRITISH INDIA :

Credit : Agricultural Credit in India : Rural Credit in Bihar and Orissa, 10, 337-345. — *Agricultural Economy in General* : Some Notes on the Problem of Rural Betterment in India, 2, 57-64. — *Bibliography on Economic and Social Questions* : 7, 262 ; 9, 320.

IRISH FREE STATE :

Co-operation : Agricultural Co-operation in the Irish Free State, 12, 373-384.

ITALY :

Credit : The National Consortium for Agricultural Improvement Credit in Italy, 10, 332-337. — *Bibliography on Economic and Social Questions* : 3, 109 ; 8, 289 ; 10, 350-51.

LATVIA :

Agricultural Economy in General : (1) The Problem of the Grain Monopoly in Latvia, 1, 21-25 ; (2) Hours of Work in Agriculture in Latvia, by Peters Starcs, Professor at the University of Latvia, 11, 353-359.

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(**) Report placed at the disposal of the Institute by the Prussian Ministry of Agriculture, Lands and Forests, as a reply to a questionnaire on the subject.

NETHERLANDS :

Agricultural Economy in General : Accountancy Offices in the Netherlands and Some Accountancy Results for 1927-28 and 1928-29, 5, 186-191.

NEW ZEALAND :

Credit : Rural Intermediate Credit in New Zealand, 1, 8-10. — *Agricultural Economy in General* : Dairy Farm Management in New Zealand, 4, 140-147.

NYASALAND :

Agricultural Economy in General : Agricultural Development in Nyasaland, 8, 280-284.

PERU :

Association : Compulsory Agricultural Societies in Peru, 11, 367-368.

POLAND :

Agricultural Economy in General : Agrarian Reform in Poland (*), 5, 157-174 and 6, 202-218.

SCOTLAND :

Agricultural Economy in General : The Potato Growing Crisis in Scotland, 3, 105-108.

SPAIN :

Co-operation : A New Impulse to Co-operation in Spain, 8, 287-289. — *Association* : Association and Co-operation in Livestock Farming in Spain, 10, 346-350. — *Credit* : Present Position of Agricultural Credit in Spain, 4, 130-137. — *Agricultural Economy in General* : Land Values and Agricultural Wealth of Spain, 3, 101-105

SWITZERLAND :

Agricultural Economy in General : (1) The Rural Exodus in Switzerland, 2, 64-68 ; (2) The Extension of Cereal Cultivation in Switzerland, 3, 108-109 ; (3) Fruit Growing in Switzerland and the New Alcohol Regulations, 6, 224-226 ; (4) Market Gardening in Switzerland : Its Present Position and Economic Importance, by P. Chavan, *Agric. Engineer*, 7, 250-255.

UNION OF SOUTH AFRICA :

Agricultural Economy in General : Irrigation and Settlement of Irrigated Land in the Union of South Africa, by R. J. van Reenen, 1, 1-7 and 2, 48-54.

UNITED STATES :

Co-operation : (1) The Basis of Payment for Produce in Co-operative Marketing Associations in the United States, 2, 41-48 ; (2) Co-operative Marketing Associations in the United States, 12, 385-391. — *Agricultural Economy in General* : (1) Income from Agricultural Production in the United States, 1, 29-30 ; (2) Returns from Farms Operated by Owners in the United States, 1, 30-33. — *Bibliography on Economic and Social Questions* : 3, 110 ; 7, 261 ; 7, 262-63 ; 8, 289 ; 9, 321.

U. R. S. S. :

Bibliography on Economic and Social Questions : 11, 369-70.

URUGUAY :

Credit : Development of Agricultural Credit in Uruguay, 8, 284-287.

(*) Reports sent by the Governments in reply to an Enquiry on Agrarian Reform made by the International Institute of Agriculture.

YUGOSLAVIA :

Agricultural Economy in General : The Privileged Company for the Export of Agricultural Products in Yugoslavia, 12, 391-395.

AGRICULTURAL LEGISLATION

AUSTRALIA :

Laws and Regulations : 2, 72.

BELGIUM :

Laws and Regulations : 2, 71.

BRITISH EMPIRE :

Laws and Regulations : 2, 72.

CZECHOSLOVAKIA :

Laws and Regulations 9, 322-23.

ECUADOR :

Laws and Regulations 5, 193.

FINLAND :

Laws and Regulations 9, 321-22.

FRANCE :

Laws and Regulations 5, 191-93 ; 9, 321

ITALY :

Laws and Regulations : 2, 71-72 ; 4, 154.

PARAGUAY :

Laws and Regulations : 5, 193.

ROUMANIA :

Laws and Regulations : 1, 34.

SPAIN :

Laws and Regulations : 5, 191.

SUDAN :

Laws and Regulations : 9, 324-25.

SWEDEN :

Laws and Regulations 9, 322.

SWITZERLAND :

Laws and Regulations: 5, 192

UNION OF SOUTH AFRICA :

Laws and Regulations : 1, 34.

UNITED STATES :

United States Legislation on Agricultural Marketing, 3, 110-114. — The New Tariff Legislation in the United States, 8, 290-293. — Laws and Regulations : 9, 323-24.

INTERNATIONAL REVIEW OF AGRICULTURE

PART II

MONTHLY BULLETIN

OF

AGRICULTURAL ECONOMICS AND SOCIOLOGY

LAND SYSTEMS

Irrigation and Settlement of Irrigated Land in the Union of South Africa.

PART I.

The sub-continent of Southern Africa may be described as a semi-elliptical plateau, with its major axis pointing northward. This plateau is surrounded by a relatively narrow coastal margin, which separates it from the sea. It varies in height, being rather over 3,000 feet in the Cape Province, rather under 5,000 feet in the Orange Free State and Western Transvaal, about 6,000 feet in the Eastern Transvaal Highveld, say, 3,000 feet in Natal and perhaps 8,000 feet in Basutoland. The coastal margin is very well defined on the west where it is from 80 to 100 miles wide. In the south it is wider and is broken by what is known as the folded belt - two long mountain ranges running parallel with the seashore between the edge of the plateau and the coast. On the east and south-east the coastal margin is narrower than on the west and more hilly. The coastal ranges in the south are notable features in the landscape, but the Union's most imposing range is the Drakensberg in the east, which culminates in that grand beacon of three States—Mount Aux Sources.

The many natural advantages of South Africa are set off by one serious disadvantage, paucity of rainfall. In parts, the rainfall is sufficient, in parts, even excessive; but over the greater portion of the Union the fall is small, and there the water problem is always present.

Along the south and west coast the rainfall is confined almost entirely to the winter months, conditions being similar to those prevailing along the western coasts of Australia and South America. The whole of the eastern coast, and the entire plateau, however, enjoy a summer rainfall.

The configuration of the subcontinent is not conducive to an even rainfall. The mountain ranges, especially on their seaward sides receive the heaviest falls and, speaking broadly, the summer rainfall decreases steadily from east to west across the plateau, as the distance from the eastern coast increases and the elevation of the plateau decreases.

From Port Elizabeth (Longitude, say, $25\frac{1}{2}$ degrees east) along the south coastal ranges to Cape Town (Longitude, say, $18\frac{1}{2}$ degrees east) and up the west coast from Cape Hanglip to Clanwilliam (Longitude, say, 19 degrees East), is a

strip about 500 miles long, averaging under 20 miles wide, with a rainfall of over 25 inches per annum (1).

If one neglects this strip and the portion lying to the seaward of it where the fall is mostly over 10 inches, one may say that (a) to the west of 23rd meridian the annual rainfall is under 10 inches, (b) to the east of 26 ½ degrees the rainfall is over 20 inches, and (c) of that portion of the country lying to the east of the 30th meridian, but a small proportion has a fall of less than 30 inches. This zone of heavy rainfall (*i. e.* over 30 inches) extends westward of the 30th meridian into Basutoland, Eastern Orange Free State, and the Transkei, and its western limit for the country to the south of the 29th parallel of Latitude, may be approximately placed at 27 ½ degrees East Longitude. Isolated and relatively negligible areas enjoy a rainfall of over 50 inches, and areas with a rainfall even exceeding 100 inches per annum are not unknown in the Union.

The following table shows the distribution of rainfall in Southern Africa — that is in the Union and Basutoland —

Distribution of Rainfall.

Rainfall	Approximate percentage area of Southern Africa
Under 10 inches	27
From 10 to 20 inches	29
From 20 to 30 inches	28
From 30 to 40 inches	13
Over 40 inches	3

In the Union of South Africa the limiting factor which determines whether or no crops may be economically grown in any locality is almost invariably the average annual rainfall at that spot. The first question to be settled by the would-be-agriculturist (as opposed to the stock farmer) concerns the sufficiency of the rainfall and the necessity or otherwise of augmenting it by irrigation. The minimum rainfall under which crops may be grown in South Africa is thus a question of prime importance. In discussing this question it is necessary to differentiate between areas lying in the summer, and those in the winter rainfall zone.

In the latter, the rain falls during a period of low temperatures and of a correspondingly high relative humidity of the atmosphere. evaporation is low, and a goodly proportion of the rainfall becomes available for crops. The coastal (*i. e.* winter rainfall) area on the south and west, mentioned before as having a rainfall of over 10 inches, and in particular the portion lying between Bredasdorp and Piquetberg, is the granary of the Union (2). Namaqualand, with an average annual rainfall of between 5 and 10 inches, produces more wheat than it requires for its own consumption, although crop failures through drought are by no means uncommon there. Experience has thus shown that, with agricultural practice as prevailing in South Africa, the minimum winter rainfall on which winter crops may be raised is somewhat less than 10 inches.

(1) See "Rainfall Normals" published by the Meteorological Office, Department of Irrigation, Union of South Africa, 1927.

(2) These districts (being less than 3 % of the area of the Union) produce 54 % of the country's entire wheat production and 64 % of the entire oat production.

In the summer rainfall zone conditions are greatly different from those in the winter rainfall zone. Here the rain falls mainly in short and frequently violent showers between which the sun beats down from an open sky removing from the soil much of the just precipitated water before it can get beyond the direct influence of solar heat or before it can be taken up by roots. In these areas crops are not grown on annual falls of 5 or 10 inches. Practice in South Africa places the lower limit for summer crops grown on summer rainfall at approximately 20 inches and it may accordingly be accepted that nowhere within the Union, west of the 26th meridian, are summer crops raised on the rainfall alone; while to the east of the 27th meridian hardy, rapidly growing summer crops, such as maize, can everywhere be grown.

It will be realised that the agricultural value of two equal annual falls may differ greatly.

All showers however, light or heavy, seasonable or unseasonable, appear in the totals of the rainfall records at the end of the twelvemonth.

Irrigation as a means of augmenting the supply of water for winter crops in the winter rainfall area is not common. Only one scheme of any magnitude has been constructed for this purpose, namely the Olifants River Scheme (van Rhynsdorp). The normal annual fall over the area irrigated under this scheme is 5 inches, and practically the whole occurs in the winter months. In the winter rainfall zone, irrigation is practised, and indeed the oldest irrigation works in the Union are to be found there; but these schemes are usually small and have been constructed mainly, if not entirely, for the watering the orchards, and summer crops generally.

The urgent need to assist the rainfall was first felt by the men farming in the summer rainfall zone and on the wrong side of 20 inch isohyet, *i. e.*, to the west of 26 ½ degrees Longitude. This description includes farmers on an area embracing almost eighty per cent of the former Cape Colony. The serious need for irrigation and its importance to the Cape Colony was realised by its Government towards the end of last century, *i. e.*, some 30 years before the formation of the Union of South Africa in 1910.

Irrigation schemes constructed prior to the last quarter of the nineteenth century, were, however, small. They were limited in extent by the size of a single irrigator's farm. An owner diverting water from a river bed was obliged by law to return any surplus to the river channel at a point above the upper boundary of his neighbour's farm. It is obvious that small schemes alone were possible under this arrangement. In 1876 the "Right of passage of Water Act" (No. 24 of 1876) was passed (1). It gave an owner the right to conduct water over the property of an upper proprietor. This enabled an irrigator to water more land than he could have irrigated had he been confined to weir sites on his own farm. This Act, however, failed to deal with the financial side of the situation. Except on rivers with low banks and steep gradients, the cost of diversion works is frequently prohibitive for an individual, and while the Act of 1876 gave greater freedom in the choice of weir sites, and thus increased the size of the areas irrigated from one-farm-weirs, it did not make possible utilisation of the water of larger rivers, where the necessary works were beyond the financial powers of the ordinary individual.

The necessity for further legislation became clear. The creation of the post of Hydraulic Engineer did much to bring matters to a head. Two principles, namely, the introduction of compulsory co-operation of farmers for irrigation pur-

(1) See Development of Irrigation in the Union of South Africa by [R. J. van Reenen. *South African Journal of Science*, Vol. XXII.

poses and the provision for granting Government loans for the purpose of constructing irrigation works, were included in the next Act, the Irrigation Act of 1877, and modern irrigation in South Africa may be said to date from that year.

At first, the rate of interest charged was six per cent. per annum, which with redemption repayments based on the fixed loan period of twenty-four years made the equal annual instalments, payable by the borrower, eight per cent. on the amount loaned. In subsequent years, many amending acts were passed altering various details in connection with the applications for loans, the rate of interest, length of the redemption period, security offered, etc., but the principles of compulsory co-operation and granting of Government Irrigation Loans remained unchanged, and were embodied in the Cape Irrigation Act of 1906 and later in its successor, the Union Irrigation Act of 1912 (See later under Board Works).

In 1906 important principles in the ownership of water were settled, an Irrigation Department to administer the Act and advise irrigators was established and irrigation was given a new start.

The ostrich feather industry was just at that time rapidly forging ahead. In 1907-08 it suffered a slight slump but it soon recovered and eclipsed all previous records. Then dawned a period of feverish activity. Everyone, who could, wished to farm ostriches. Single birds were sold for prices which ran into four figures, and many fortunes were made. The ostrich requires a dry climate, and at the same time in order to produce good feathers, a sufficiency of lucerne. Lucerne lands, accordingly, came into great demand. At Outdshoorn, the home of the ostrich feather industry, lucerne lands under irrigation were sold for several hundreds of pounds per acre; but those lands were not sufficient to supply the demand. The semi-arid portion of the Cape province, the part lying below the 15 inch isohyet, is the natural home of the ostrich; the soil and temperature are ideal for the growth of lucerne; only water was needed. The new irrigation policy of the Government became generally known and the newly established Department of Irrigation was besieged by applicants requesting preparation of designs and approval of loans for proposed irrigation works. Farmers dreamed of becoming rich overnight. Many estimated that their farms would increase in value two or three hundred fold by the construction of works to irrigate them. Out of this period, say from 1908 to the outbreak of the Great War, when the ostrich feather market collapsed, practically all the irrigation schemes in the old Cape Colony or Cape Province were initiated.

Since 1914 the feather industry has been declining. The Great War, the motor car, and the masculinity discernable in modern ladies' fashions have all had their effect upon the feather market. There was a brief show of activity in 1919; but feathers, to the value of many hundreds of thousands of pounds (according to the market prices of 1914), stored since 1914, in expectancy of a rise of the market, remain unsold.

With the decline of the feather industry, a new era in irrigation began. Irrigation schemes are now promoted for the production of lucerne, to be sold as hay or fed on the farm; for the production of tobacco or vegetables; or for the production of those sorts of fruit which can be grown in the Union. During the first decade of the present century, irrigation was, practically speaking, confined to that portion of the Cape Province where crop-raising, on the rainfall alone, was impossible. Now, during the third decade, attention is being drawn more and more to the possibilities of irrigation as an aid to the production of crops in areas where the rainfall, though usually sufficient or very nearly so, occasionally drops so low as to bring about a crop failure.

No reliable figures of the areas of land at present under regular irrigation in the Union of South Africa are available. In the report of the Agricultural Census for 1918 the irrigated area in the Union is given as 1,467,040 acres. The following table shows the areas under irrigation in the four provinces of the Union according to the 1921 Census (1).

Cape Province	476,800 acres
Transvaal	23,660 "
Natal	266,740 "
Orange Free State	88,150 "
	<hr/> 815,350 "

The term "irrigated land" however is used very loosely, and a census, such as the above, based on returns furnished by farmers themselves, is not to be depended on. In the larger schemes, carried out co-operatively, details as to areas contributing to the cost of the schemes are available, but even these, for many reasons, do not reflect the true state of affairs. The area contributing is usually far in excess of the area which is, or will, regularly be irrigated under these schemes.

It is axiomatic that the ultimate extent of irrigation is dependent upon the available water supply : in other words by the run-off. It should be clear from what has been written about the rainfall of the country that the run-off is small and definitely limited in volume. The extent of irrigation in South Africa, has, therefore a definite limit.

Run-off percentages in the Union vary from 60 for small steep catchments with a high rainfall to practically zero for large, flat, sandy catchments with a low annual rainfall. In 1920 an estimate of the run-off was prepared by a former Director of Irrigation from the best information at that time available (2). According to his estimates the average annual rainfall over the whole area of the Union and Basutoland is just under five hundred million acre feet. After a detailed consideration of the different catchments, he estimated the total annual run-off from the same area at thirty-two and one-third million acre feet, giving a percentage run-off of very nearly six and a half per cent. Assuming this estimate to be correct, one may make a tentative calculation of the total area of the Union which may eventually be irrigated.

In this connection the Drought Investigation Commission stated (3).—

"If all this water (*i. e.* thirty-two and one-third million acre feet) were available for irrigation, only a little over 6,000,000 acres could be irrigated if it be assumed that an annual depth of five feet is necessary for irrigation — a moderate figure when all losses are allowed for. Three facts must be borne in mind. Firstly one half of the total run-off is derived from the coastal fringe, the average altitude of which is some two or three thousand feet less than that of the main semi-arid portion.* Secondly, the coastal rivers flow through extensive areas where irrigation is either unnecessary, or plays a very small role in the agriculture of that area.

(1) 1926 Census figures are not yet available.

(2) See Water Power in the Union of South Africa by F. E. Kanthack. *The South African Journal of Industries* Vol. III.

(3) See Final Report of the Drought Investigation Commission, Union of South Africa, October 1923.

Thirdly, in many parts where irrigation is needed, and topographically speaking possible, the high cost of the necessary works or the unsuitability of the soil, makes it economically impossible. It is therefore evident that the theoretical maximum of 6,000,000 acres can never be approached in practice. The estimate of approximately 3,000,000 acres based by Mr. Kanthack on a detailed analysis of the catchments, may be considered, as he himself styles it, 'truly optimistic'.

In regard to these figures, it may be noted that probably sufficient weight is not given to the ultimate possibilities of irrigation in the better watered portions of the Union. The higher figure quoted above (6,000,000 acres) represents two per cent. of the area of the Union, the lower, only one per cent. These figures help one to realise how small a portion of the country can be irrigated, and a comparison with the rainfall analysis above will serve to show the limits of South Africa's possibilities as a crop raiser.

There are, except in the coastal fringe, but few permanent rivers in the Union. Even the Orange River with a catchment area of 235,730 square miles may, not infrequently, be crossed dryshod during the late winter or early spring. On the Karroo, as the plateau of the Cape Province is called, in the area where the rainfall is under 15 inches, the rivers are merely dry channels for three hundred days or even more in every year, and on the few days on which water does flow in them it comes down in short, sharp, and not infrequently devastating floods.

From the gauging records of three typical Karroo rivers it appears that the annual flow of the Kamanassie River during the years 1911 to 1927, varied, from a maximum of 10,473 million cubic feet to a minimum of only 410 million cubic feet; the Gamka River flow varied from 3,512 million cubic feet to 299 million cubic feet; the Buffels River from 2,533 million cubic feet to zero.

In the early days of the present century irrigation works in the Karroo were mainly diversion works constructed across periodic streams of this type and known as "flood schemes". Under such works lucerne for feeding ostriches was the main crop and was grown almost exclusively by owners of large farms who were not solely dependent upon the produce of their irrigated lands. As farms were cut up into smaller holdings, and owners became more and more dependent upon the yields from their irrigated lands, the effect of the uncertain flow of the rivers became more keenly felt. A period of several dry seasons (1) accentuated the inefficiency of "flood-schemes", and irrigators under them began to agitate for the construction of storage works to conserve water from the wet season for use in the dry, and to save the water available in a year of plenty for use in a year of drought. As a result of this movement, several large storage works were constructed at or near the upper end of valleys or portions of valleys which had previously been brought under "flood-schemes".

Under this category fall works in other parts of the Union, such as Lake Arthur and the Grass Ridge Dam, both serving a long stretch of the Great Fish River Valley; Lake Mentz, and van Rynevelds Pass Dam, both serving portions of the Sundays River Valley, the Kamanassie and Calitzdorp Dams, serving old irrigated areas of the Olifants and Gamka Rivers, respectively. There are also storage works that were constructed to serve directly an area below them without the intervention of a series of diversion works or the preliminary construction of "flood schemes".

Examples of works of this nature are the Ongers River Dam of the Smartt

(1) See A Resumé of the Drought Problem in the Union of South Africa by R. J. van Reenen, *South African Journal of Science*, Vol. XX.

Syndicate near Britstown, Cape Province, and the Hartebeestpoort Dam near Pretoria, Transvaal.

Irrigation schemes in the Union may be .—

- (a) Private Schemes,
- (b) Board Schemes,
- (c) Government Schemes

(a) *Private schemes* are those constructed by individuals or by private companies. Many have been in existence for generations, and the earlier works constructed by individuals, especially in the Transvaal, were constructed without Government aid ; but in many cases funds have been advanced by the State on the security of the landed property of the irrigators, and these small schemes on private farms thus State aided have proved to be of incalculable value in producing fodder for stock and preventing drought losses. Private Companies constructing irrigation works have almost invariably raised their own funds.

(b) *Board Works or Schemes* are co-operative enterprises. On application from at least a fixed minimum proportion of landowners concerned in a single project an investigation is held on behalf of the Government, and if on such investigation it appear that the owners of two-thirds of the area which will come under the project are in favour thereof, an Irrigation District is proclaimed, and all, not even excepting objectors, are included in the District. A Board is then elected by the participators and proceeds with the construction of the works. Almost invariably the election of a Board is followed by an application to the Government for a loan to construct the works. If the scheme be economically feasible the loan is granted on certain terms as to interest, period of redemption, etc. The security for such loans is the rates leviable on the property commanded by the works. All landowners under a scheme are jointly and severally liable for the repayment of the debt, and on failure of the Board to pay any instalment on the due date, the Government may take over the functions of the Board and levy and collect rates to recoup itself. For the rest, the scheme is managed co-operatively, the Board members who are elected from time to time, acting virtually as directors of a company.

(c) *Government Works or Schemes* as defined by Act of Parliament are those irrigation works which are constructed or maintained by, or are under the control of, the Government, or which the Government proposes to construct or maintain. There are but few Government Irrigation Works in the Union, although by far the greater number of works have been constructed from funds advanced by the State. The principal Government Irrigation Works are :—

	Situate	Area Acres	Remarks
Douglas	on Vaal River	2,418	Water is available for only 1,200 acres
van Wyksvlei	Calvinia	6,689	
Copjies	on Rhenoster River	2,321	Area will probably be increased
Klipdrift	Potchefstroom District	1,845	
Potchefstroom Settlements	on Mooi River	3,777	Probably only 30,000 acres will be regularly irrigable The area has not yet been definitely fixed.
Hartebeestpoort	Pretoria District	47,962	
Olifants River	van Rhynsdorp District	30,000	

About one half of the land commanded by the two last-mentioned works was at the date of their completion in possession of private individuals. All land under non-Government works was privately owned.

(to be continued)

R. J. VAN REENEN.

CREDIT

Rural Intermediate Credit in New Zealand.

The Rural Intermediate Credit Act which came into force in New Zealand in 1928 represents the second instalment of legislation giving effect to the recommendations of the Royal Commission of 1925 on rural credits which inquired into and reported on the systems in use in various countries of Europe and America for affording financial assistance to farmers.

The object of the Act is to provide for New Zealand primary producers intermediate credit on the security of mortgages or other charges on land or chattels, or on approved personal security, at rates lower than those which have prevailed heretofore in regard to farmers' finance.

The Administration of the Act is in the hands of a board known as the Rural Intermediate Credit Board which consists of seven members, one of whom is the Public Trustee, the other six are appointed by the Governor General of New Zealand and one at least of these must have practical experience of farming. Grants are made to this Board out of the Ordinary Revenue Account of the Consolidated Fund as the Minister of Finance may think fit, the total advanced outstanding at any one time not to exceed £415,000, of which £10,000 is advanced for general administrative purposes, £5,000 for the preliminary expenses of the establishment of associations under the Act, and the remainder in such sums as may be required for carrying on the business of the Board. One third, however, of every advance made for this last named purpose must be invested in Government securities and used only for redemption of debentures issued by the Board.

The funds thus provided under the scheme of intermediate credit are made available for the farming community in four different ways :

(a) A special class of limited liability company may be established by farmers in any district, known as Co-operative Rural Intermediate Credit Associations consisting of not less than 20 members engaged in farming operations, the sole object of these associations being the obtaining of advances from the board, in order to relend to shareholders upon approved securities.

(b) Any individual farmer, in districts where it is not possible to set up such associations, may obtain a loan direct from the Board provided he is able to obtain a guarantee to the board's satisfaction of not less than 20 per cent. of the loan.

(c) Advances may also be made to co-operative societies, the object of which is the production or sale of staple agricultural or pastoral products including live stock and including also goods manufactured from such products. Such societies must have a subscribed capital of at least £2,500 and a membership of not less than 30 members, and must also be incorporated under the Companies Act.

(d) Promissory notes may be discounted on a farmer's behalf by some company, firm or person whose financial position has been established to the satisfaction of the Board. Advances of £100 or less may be obtained by this method and the system has proved particularly valuable in enabling farmers to obtain funds for purchase of fertilisers, seeds or other seasonal requirements.

The conditions and terms under which loans may be obtained by the above methods are as follows :

Membership of a rural intermediate credit association entails a minimum share contribution of 25 shares of the value £1, and 5 per cent. of the share capital taken up must be paid within twelve months of the formation of an association, or ear-

lier if the Board so require, or if the member obtains a loan. If the loan applied for exceeds £250, the member is asked to take up shares to the amount of one-tenth of the loan. The maximum amount permitted to be granted to any one borrower is £1000. The maximum rate of interest is 7 per cent., and the maximum term for any loan is fixed at 5 years. The purposes for which loans may be granted are defined by the Act and are the following :

(a) The clearing, fencing, draining, and general improvement of land in the occupation of the applicant ;

(b) The erection of buildings on any such land ;

(c) The purchase of implements, stock, seeds, plants, trees and other things required in respect of the occupation and use of any land ;

(d) The payment of any mortgage, debt, or other liability of the applicant incurred in relation to farming operations.

When a shareholder has repaid to the association the full amount of his loan and interest he is entitled to surrender his shares, provided his retirement will not reduce the number of shareholders below 20, and to receive from the association such amount as is agreed upon between the shareholders and the association and approved by the Board, as the consideration for the surrender of his shares.

Similar conditions as to purposes for which the money is required, the rate of interest and the maximum amount of the loan exist for direct loans to individual farmers. An applicant must offer security in the form of chattels, *viz.*, stock, produce, implements, but the Board may insist upon additional security, such as a mortgage on the applicant's land. No farmer is permitted to obtain a larger advance than £1000 from the Board by making separate applications direct and through an association.

In the case of ordinary co-operative societies fulfilling the conditions already mentioned, the Board may make advances up to 80 per cent. of the fair market value of the stock and produce belonging to the society together with such collateral personal security as the Board may require. Loans to co-operative societies are restricted to terms of not less than six months or longer than three years, and the rate of interest is, as in the case of loans to a credit association or to an individual farmer, 7 per cent.

The promissory note system has been utilised largely by dairy companies desirous of assisting the farmers who supply them with milk and butterfat to obtain the benefits of this simple and inexpensive means of securing funds for seasonal requirements. The procedure is as follows : The company endorses promissory notes as required which are then held by the Board as against the advances. Repayment is ensured by means of monthly deductions from the milk cheques given by the company to the individual suppliers. The total amount of these deductions is paid into the Board's account each month, and a number of the promissory notes representing such amount is then handed back to the dairy companies. Interest on the promissory notes thus redeemed will cease, so far as the Board is concerned, from the time they are so handed over, and adjustments will be made by the company so that each supplier will, in effect, pay interest only on the amount outstanding from time to time in respect of his promissory note. The discount rate fixed by the Board is only 6 ½ per cent., hence it is of advantage to farmers to use this method of securing financial accommodation. Among other examples of the benefits of this method may be instanced the experience of a co-operative dairy company in the North Auckland district which had the opportunity of purchasing a quantity of fertiliser on very favourable terms. The suppliers were requested to state their requirements for the coming season (1928-29) and the

company undertook to accept payment by deductions from their milk cheques spread over a period of ten months. The company financed the purchase of the fertiliser by obtaining promissory notes from individual suppliers and discounting them with the Board, the total amount involved being the sum of £1,100. Not only was the company thereby enabled to make a cash purchase of the fertiliser but the individual farmers were enabled to pay for their supplies of fertiliser by monthly deductions from their milk cheques, while receiving rebates of interest monthly.

C. H.

New Zealand Report of Royal Commission on Rural Credits Wellington 1926

Rural Intermediate Credit Act New Zealand, 1927, No 45

New Zealand Dairymen Vol XXXII, Nos 3, and 5, Vol XXXIII, Nos 6 and 8. Wellington, December 1927, February 1928, March and May 1929

New Finance for Farmers Intermediate Credit System New Zealand Intermediate Credit Board Auckland 1928

INSURANCE

Insurance of Farm Workers in Austria.

Beginning of Insurance.—The Austrian Federal Law on insurance against sickness, accident and disablement of agricultural and forestry workers, the short title of which is Law on insurance of land workers (*Landarbeiterversicherungsgesetz*) was passed a short time ago by the Austrian Parliament and has added a further link to the chain of measures for social insurance. The more importance is to be attached to the adoption of a measure for insurance of land workers, from the fact that a very wide circle of persons is thereby affected and that, apart from this measure, there is but little development of organised relations, whether personal or technical, in Austrian agriculture, as compared with such development in trade, business and industry.

In accordance with the terms of Austrian land workers' insurance the following persons are obliged to insure for the contingencies of sickness, disablement, old age and death, as well as for the consequences of an accident in the course of work: *viz.* all persons engaged in agriculture as an occupation but not farming on their own account, who are occupied either as ordinary workers or officials or in the capacity of learners, on farm or forestry undertakings including gardens not worked for profit, hunting land and fisheries, on land and forestry subsidiary undertakings; persons occupied in co-operative societies for purchase and farming and other farmers' unions, the objects of which are the encouragement of the agricultural and forestry production of their members, in particular by co-operative purchase of farming or forestry requisites, or by elaboration or sale of such products as are produced on the property of the individual members; persons occupied in federations of such co-operative societies or unions; and finally persons who are domestic servants in the household of an employer who is either a farmer or a forester. An undertaking is to be looked upon in the sense of this law, as a subsidiary farming or forestry undertaking the main object of which is the elaboration of the farm or forestry products belonging to the employer of labour (whether owner or tenant) in so far as such an undertaking does not prove to be an independent economic body administered apart from agriculture and forestry.

As regards disablement insurance, obligation to insure begins when the eighteenth year is completed.

The following classes of persons are exempt from the obligation to insure :

1. The wife (or husband) of the employer of labour.
2. Employed persons whose livelihood at the same time mainly depends on their independent earning capacity, or whose livelihood is secured by a reservation deed drawn up by a notary or entered in the land register.
3. Persons who carry on an occupation involving under this law obligation to insure side by side with another independent means of livelihood which represents their main source of income.
4. Persons who are maintained by charity and only occasionally follow an occupation involving under this law the obligation to insure. Other persons who from ill health or mental deficiency or from advanced age are capable of work to a limited extent only.

All these classes of persons are however only to be regarded as exempted, if they are drawing no wage or only such a wage as does not amount to one-third of the wage which the ordinary normal worker of the same type is accustomed to earn in the same locality.

Exemption from sickness insurance in accordance with the Law on insurance of land workers is granted to the following persons living in the household of the employer and following an occupation as workers on his land or forest undertaking : (a) his children (legitimate, illegitimate and legitimised) and grandchildren, adopted children, stepchildren and foster children (the last-named if the relationship to the employer dates at least from the eighth year of life) ; (b) his sons-in-law and daughters-in-law ; (c) his parents, step-parents, parents-in-law, and grandparents ; (d) his brothers and sisters.

It is a prerequisite for exemption that the employer presents to the agricultural sickness insurance fund (*Landwirtschaftskrankenkasse*) a written statement, in which he undertakes, in the case of all workers of this kind in his employ, to secure out of his own resources their maintenance and proper care in the event of sickness. The classes of persons already mentioned are also exempted from the obligation to insure against accident and disablement or from one of these two branches of insurance, if the employer passes a written statement to the bank giving a similar undertaking in respect of the event of accident or disablement.

The possibility of enlarging the circle of persons insured for disablement, old age and death as well as for the consequences of accidents during employment is provided for, and is of importance in itself and for the progress of social insurance in Austria. On the proposal of the principal agricultural and forestry organisations and of the insurance organisation of a province of the Federation the owners (or tenants) of farm or forest undertakings in the province, who depend for their livelihood mainly on the output of these undertakings, may be brought under an accident and disablement insurance or merely an accident insurance by an Order to be published by the Federal Minister for Social Welfare (*Soziale Verwaltung*) in conjunction with the Minister for Agriculture and Forestry. The proposal of the agricultural and forestry organisations and of the provincial Government cannot be retracted when once the insurance for this group of persons has been initiated. It is of course provided that the securing of the disablement income is only to be taken into account if it is shown from observation of the financial development of the insurance of farm workers that this represents no increased burden on the insured employees in work. In the event of the grouping of independent owners (or tenants) in a scheme of accident and disablement insurance, it must be understood that com-

pensation payments arising out of disablement insurance covers all compensation with the exception of disablement pension.

Provision is also made for the possibility of owners (or tenants) of farms, who devote themselves in particular to the management of the property, voluntarily taking out an insurance against sickness in the agricultural sick insurance banks. The regulations may however enact that voluntary sick insurance is limited to a certain figure in the case of owners or tenants of small agricultural holdings. Moreover it is the condition of the extension of voluntary sick insurance to owners (tenants) that at least 500 persons must be on the books of the benefit society. Voluntary sick insurance may extend to all compensation payments except that of sick pay. If during the last calendar year the average number of the persons voluntarily insured was less than 400, it is open to the benefit society to continue such insurance or not.

As is the case with other groups of social insurance in Austria, the Law on insurance of land workers classifies insured persons into nine classes in accordance with their wage. The following is the scheme of the classification.

Class	Wages earned					
	per day schilling		per week schilling		per month schilling	
1	Less than	0.8	Less than	4.8	Less than	20.8
2	From	0.8 to 1.2	From	4.8 to 7.2	From	20.8 to 31.2
3	»	1.2 » 1.8	»	7.2 » 10.8	»	31.2 » 46.8
4	»	1.8 » 2.4	»	10.8 » 14.4	»	46.8 » 62.4
5	»	2.4 » 3.0	»	14.4 » 18.0	»	62.4 » 78.0
6	»	3.0 » 3.6	»	18.0 » 21.6	»	78.0 » 93.6
7	»	3.6 » 4.8	»	21.6 » 28.8	»	93.6 » 124.8
8	»	4.8 » 6.0	»	28.8 » 36.0	»	124.8 » 156.0
9	Over	6.0	Over	36.0	Over	156.0

It is established that agricultural workers who live in the house with their employer or are boarded by him, can be placed only in the lower seven classes, on the other hand it may be laid down by the rules that seasonal workers whose wage exceeds 4.8 schillings are in any case placed in the eighth class while the ninth class is simply for professional foresters or saw mill workers.

As remuneration for work in addition to the wage are to be understood supplementary payments of different kinds, properly secured profit sharing, earnings, payments in kind, subsidies from third parties, so far as the granting of such subsidies is customary and has an effect on the extent of the wage. For classification on the basis of wage the determining factor is the remuneration assured for a certain period.

Administration of Insurance.—The second part of the Austrian Law on insurance of land workers deals with the technical conditions of the organisation of insurance. Sickness insurance of land workers is effected by the agricultural sickness insurance funds, and accident and disablement insurance by the land workers' insurance institute (*Landarbeiterversicherungsanstalt*). Should proposals be put forward by the separate governments for the establishment by Order of the Federal Minister for Social Welfare of special *Landarbeiterversicherungsanstalten* for the provinces of Vienna, Lower Austria and Burgenland, Upper Austria, Styria, Carin-

thia, Salzburg, Tirol and Vorarlberg, then in place of the single institution which is at present all that is contemplated there will be several, one attached to each of the separate provinces.

The administrative bodies of the insurance agencies are in the case of the sickness insurance funds composed of a general meeting, the board of directors and the committee of superintendence, in the case of the *Landarbeiterversicherungsanstalt*, of the general meeting, the board of directors and the finance committees. The duration of office of the administrative bodies of the insurance agencies is properly speaking four years. Representatives of employers and of employees are members of these bodies, as representative of insurance. The conditions for election of such a representative of insurance is the attainment of the age of 21, and all the circumstances which constitute eligibility for the National Council. Equally eligible as representatives of insurance are members of the board and officials of the organisations of employers and employees.

The elections to these administrative bodies are by ballot and the usual procedure is followed if more than two persons are to be elected.

In other cases the majority of the votes recorded is required for election.

For the yearly estimate of the agricultural sickness insurance funds the approval of the board of directors is required, while that of the land workers' insurance institute must be approved by the general meeting. In both cases the estimates must be laid before the boards of control at least four weeks before the taking of the decision. It is an established principle that the assets of the insurance agencies available for investment are invested so as to bring in satisfactory returns.

At least one-eighth of the assets of the *Landarbeiterversicherungsanstalt* available for permanent investment consists of government securities, that is, given by the Austrian Republic or notes of hand assumed by it as obligation; a further eighth is to be invested in bonds of the provinces or of credit institutions, and security is given by these bodies.

In the case of investment in the provinces the number of insured persons employed in the different provinces of the Federation must, so far as possible, be taken into account. For decisions as to the permanent investment of the assets a two-thirds majority of the votes recorded is required. Other types of investment of assets are only permitted with the approval of the Federal Minister for Social Welfare. Such investments must not exceed in all half the invested assets of the insurance agencies.

The Federal Government exercises a supervision over the agencies for insurance of land workers as well as over any aid or care institutions that are attached to them. The Federal Minister for Social Insurance is the supreme authority. Each local authority for the district, if designated for the purpose by the Governor of the province, is called upon to exercise direct supervision, provided that the area served by the fund does not extend to an entire province. In this latter case the supervision is exercised by the Governor himself directly. The Minister for Social Welfare is responsible for direct administration in respect of the *Landarbeiterversicherungsanstalt*.

Objects of insurance. — The third section regulates the compensation payments. Sickness insurance secures: 1. Sick pay. 2. Maternity assistance. 3. Funeral expenses.

Accident insurance secures: 1. Pension for injuries and supply of artificial limbs and surgical aid. 2. Remedial treatment. 3. Pensions for survivors, and in particular pensions for widows and orphans and other survivors.

Disablement insurance secures: 1. Disablement and old-age pensions. 2. Pensions

for survivors, which may again consist of widows' or orphans' pensions. 3. Single payments in lump sums to female insured persons.

(a) *Sickness insurance.* — Sickness benefit covers nursing and medical assistance, including maternity assistance as well as treatment for rabies, also remedial treatment of all kinds and other aids to restoration to capacity for work, such as artificial limbs, glasses, trusses, etc. Sickness pay begins from the fourth day of incapacitation. It is reckoned in accordance with the wage class in which the insured person is enrolled, the following sum per day being granted as sickness pay in the various classes :

Wage class	Sickness pay per day schillings
1	0.6
2	0.8
3	1.2
4	1.6
5	2.0
6	2.4
7	3.0
8	3.6
9	4.2

Sickness pay is not given if the illness has been purposely induced by the insured person, nor is it given while he is undergoing institutional treatment on the account of the agricultural sickness fund and so long as the insured person enjoys accommodation and care or obtains in cash or kind at least 80 per cent. of his total wage.

The advantages of the sickness benefit last as long as the illness lasts, and may be given over 26 weeks, if an earlier termination of the illness is not to be anticipated. If it is a question of insured persons who had been insured against sickness uninterruptedly on the obligatory basis for 30 weeks the sickness benefit is available for 52 weeks at longest. The first day of notification of sickness as a rule counts as the first day of sickness.

Within the limits of the sickness pay arrangements the agricultural sickness funds are under the obligation of taking precautions for its safeguarding. Free choice of the physician within the area administered by the fund is allowed to the insured persons, this being the principle of the so-called organised free choice. A written contract defining rights and duties on either side binds the physicians called in for treatment of persons making a claim and the agricultural sickness insurance fund or Federation of such funds. The funds may enter into agreements with the organisations of physicians in their area as to the content of the contracts to be concluded with the individual physicians. These are the so-called model contracts on which the individual contract is based.

In place of free medical treatment, necessary remedies and sickness pay, institutional care is available for the insured person, *i. e.* free treatment and attention in a home or institution, if the kind of sickness required it or if there is no possibility of treatment on the home of the worker. For persons insured for treatment in a public institution, provided that no further compensation obligations have been

voluntarily undertaken the sickness insurance funds have to pay up to four weeks the compensation payments of the general scale up to three times the minimum daily wage of the wage group in which the insured person was finally enrolled. If the fund sends an insured person to a non-public institution it has to pay the cost of the treatment to the extent stipulated.

Maternity benefit is paid to those insured who within the twelve months before confinement have been for 25 weeks in an employment in which workers must be insured under this or some other Federal law. There is no uniform system of payment of maternity benefits; they can be made in the form of a lump sum graded according to the wage class or are paid in combination with a nursing period payment. In detail these benefits are adjusted in conformity with the regulations in the separate divisions of the area administered by the fund.

In the event of the death of an insured person, whose claim for sickness pay is exhausted not more than half a year ago, the agricultural sickness insurance fund has to make a burial payment to the survivors who have to meet the funeral expenses, such payment to amount to forty times the sickness pay to which the insured person had a claim. The minimum sum payable as funeral payment is 60 schillings.

(b) *Accident insurance.* — This covers under the Austrian land workers' insurance system the compensation for injury caused by accident in employment and consisting in loss or diminution of working capacity or death. As accidents in employment are considered all accidents occurring in pursuit of the calling or in connection with it, in particular such accidents as occur in domestic or other routine in which the insured person is engaged either as worker, servant or pupil under the orders of the employer or in his name or of some superior in employment of the insured person; in addition accidents occurring on the way to or from work, provided that the journey homewards or to work is not interrupted for the private business of the insured person or otherwise without connection with the employment. Diseases caused by the vocational employment are equally to be considered as accidents in work. Occupational diseases which may be regarded as accidents in employment are so determined by the Minister for Social Welfare. On the application of the principal agricultural and forestry organisations of a province of the Federation and of the provincial government, the accident insurance of persons obliged to insure may be extended to accidents other than accidents in work, for the area of the province and by Order of the Federal Minister for Social Welfare in accord with the Federal Minister for Agriculture and Forestry.

Accident pay is made to the injured person, whose earning capacity is diminished by more than 15 per cent., from the day following the end of the remedial treatment necessitated by the accident, but at latest from the beginning of the second year after the occurrence of the accident, for the duration of the diminution of work capacity. It is reckoned according to the degree of diminution in earning capacity caused by the accident and is paid, so long as the injured person is wholly incapable of earning in consequence of the accident, per month twenty times the basis of calculation; so long as the injured person is partially, but to the extent of more than one-third — in the case of a forest or saw mill worker more than one-fifth — incapacitated for earning, a part payment is made which corresponds to the degree of diminution of the earning capacity.

Every injured person has a claim to maintenance with fitting of artificial limbs and surgical treatment on the extent required by the personal or vocational needs of the injured person.

The agricultural sickness insurance fund to which the injured person belongs

has to supply the remedial treatment required up to the date of expiry of the claim for sick pay. If the treatment lasts for more than four weeks the land workers' insurance institute has to supply to the sickness fund from the first day of the five weeks' compensation for the expenditure at the rate of one and a half times the legal sickness fund pay. The insurance institute can at any time take over the care of the injured person from the bank and with regard to him and his relatives assumes all the duties and rights of the bank. In this case the sickness fund has to pay to the insurance institute for the first four weeks after the accident compensation payment at the above rate.

The survivors of a person who has died in consequence of an accident receive compensation on the death, if the deceased person was already drawing accident pay ; and in addition a contribution is made towards the costs of the funeral at the rate of the monthly instalment of the full pay, which is multiplied two and a half times, with a minimum of 60 schilling if burial money is not payable out of the sickness insurance.

The widow of a man who has been killed outright by an accident receives up to her death or remarriage widow's pay in the proportion of one third of the accident pay to which he would have been entitled. If the widow marries a lump sum is paid to her amounting to 36 times the monthly instalment of her pay. Orphan pay is available for the own child of an insured parent, if not provided for, up to the 16th year of life. These payments amount to one-sixth of the full pay due to the deceased and are raised to one-fourth of this if the child has also lost the other parent. Orphan pay is further guaranteed after the completion of the 16th year if the child on account of bodily or mental infirmity is not in a position to earn his living

It is a general rule that the survivors' pay may not exceed the full pay together with the children's allowances. All types of pay are liable to be cut down so as to be within this maximum.

Provision is made for the possibility of making payments in lump sums. An agreement may be made between the body effecting the insurance and a beneficiary that on renouncement of the pay or a part of it a single payment is made which is to correspond as a maximum to 100 times the monthly instalment of the pay thus converted.

(c) *Disablement insurance.* — In the third place disablement insurance of the land workers is regulated by the law. The claim for disablement or old age pay is in the first place subject to the condition that the insured person has within the last five years before the commencement of insurance put aside at least 104 weekly contributions, of which at least 52 must fall within the last three years. On fulfilment of these conditions the insured person has a claim to disablement pay, if he becomes permanently invalided through disease or some infirmity which is not congenital. Anyone is regarded as disabled who, by exercise of an activity which corresponds to his powers and capacities and which may be expected of him in consideration of his training and previous calling, is no longer able to earn more than one-third of what persons of the same type but physically and mentally sound with similar training in the same neighbourhood are accustomed to earn by work. In the event of the fulfilment of these conditions the insured person receives on completion of the 65th year of life and after payment of 500 weekly contributions disablement pay in the form of old age pension, even if he is not yet disabled. If the recipient of disablement pay is helpless to the extent of requiring constant assistance or care, the contribution of the insurance institution is raised by one and a half times. In the event of the death of the insured person the widow has the right to draw widow's pay for twelve months. The claim of the widow to extension of this pay

is admitted if she is disabled, has completed her 65th year, or if she has more than two children under 16 years of age left unprovided for or has to maintain a child who is completely incapacitated by some physical or mental defect. Up to the completion of the 16th year of life orphan pay is also allowed to the children left by the deceased, and this also is extended after completion of the 16th year, if the child is by reason of mental or physical defect unable to maintain itself.

To disablement pay is added for each child remaining in the care of the recipient of the pay and up to the completion of the 16th year an allowance which amounts for one child to one-tenth of the pay, for each additional child one-twentieth of the pay, with a minimum of 1.2 schilling per child per month.

Every pension as paid is regularly supplemented from public funds to the extent of six schillings for disablement or old age pay, three schillings for widow's pay, 1.5 schilling for orphan pay, 2.25 schillings for child orphaned of both parents and one schilling for child allowance monthly.

Organisation of Insurance. — (a) Agricultural sickness insurance funds.

The fourth section of the Law on insurance of land workers is of fundamental importance since it contains the decisive provisions for the organisation of insurance. Sickness insurance is effected by agricultural sickness insurance funds on which devolve both the execution of sickness insurance and co-operation in the effecting of insurance in the other branches of land workers' insurance. The following functions are especially assigned to these funds in the law :

The agricultural sickness insurance funds have to receive notices of admission or withdrawal of insured persons and to supervise the punctual compliance with the rules as regards notification, as well as the status of the insured persons in all branches of insurance. They have to calculate the premiums for sick insurance, to prescribe their payment and to collect them, whereas the same duties in respect of accident and disablement insurance only come into consideration if they are not expressly reserved to the land workers' insurance institute. The funds have also to make the sick insurance payments, to co-operate in the establishment of claims for compensation from accident and disablement insurance and also in the supervision of the recipient of the payment ; they moreover participate in the conduct of the remedial treatment in the case of accident and disablement insurance as well as in the sick insurance of recipients of disablement or old age pensions. In addition their functions include the payment of contributions for the other branches of insurance to the land workers' insurance institute, making up accounts with this institution, and the administration of the funds.

On principle an agricultural sickness insurance fund is to be established for the area of a Federal province, and in this way the sphere of an already existing fund embracing a whole province is maintained intact. In any province in which such a fund does not exist, the governor is empowered, after consultation with the principal agricultural and forestry organisations, as well as with the vocational unions of workers engaged in agriculture or forestry, to ordain that additional agricultural sickness insurance funds are to be established in the provinces. In this event he has to determine the headquarters and the administrative area of the separate funds. Such a fund may only be established for a local area containing at least 2,000 insured persons.

The general meeting of the agricultural sickness insurance funds is composed two-fifths of representatives of the employers and three-fifths of the representatives of the employees elected by direct vote. The number of the delegates is fixed according to the number of members who belong to the fund and are counted in it on the appointed day (*die die Kasse am Stichtage besitzt und betragt*).

Funds with up to 3.000 members 25 representatives.

for every full	1,000	more members up to	10,000	five more
»	»	»	2,000	»
»	»	»	5,000	»
»	»	»	10,000	»
»	»	»	20,000	»

The right to vote may be exercised by employers and employees who have completed their 18th year of life ; employees only if they on the first day of the month preceding the announcement of the election (the appointed day) were in the sense of this law members of the agricultural sickness insurance fund, employers only if they were employing on that day members of the fund under obligation to insure.

The Board of the agricultural sickness insurance fund consists of two-fifths representatives of the employers and three-fifths of representatives of the employees. The number of the members of the Board is made up as follows :

with a membership up to	50 000 members	15 Board members
	over 50,000	» 20 »
	» 100,000	» 25 »

The Finance Committee of the agricultural sickness insurance fund consists in three fifths representatives of the employers and two fifths representatives of the employees. The number of the members of the finance committee is made up as follows :

with a membership up to	50,000 members	5 Committee members
»	» over 50,000	» 10 »

Members of the Executive Committee cannot at the same time be members of the Finance Committee.

The functions of the general meeting are thus outlined in the law : the General Assembly has to elect the Board of directors, the finance committee and the assessors of the court of arbitration, to pass the annual report of the Board and to pass the accounts on the report of the finance committee. It has further to decide on the rules and their modifications and to take decision on the following up of claims which the fund is making against members of the Board or of the finance committee in respect of their methods of administration.

The Board of directors administers the agricultural sickness insurance fund and represents it on all matters not specially reserved by law or by resolution to the general meeting or to any other organ of the fund. The Board is also in a special sense responsible for making the agreements with physicians, pharmacies, approved dental clinics and with institutions for care and treatment, for engaging and dismissing officers and employees, and making hiring agreements with them after consultation with the federation to which the fund belongs and with the union of employees. The function of the finance Committee is to supervise the whole conduct of the fund.

Provision has been made that in provinces where there exist several agricultural sickness insurance funds these should be grouped in a provincial federation for the pursuance of their common objects. These federations are primarily responsible for :

the provision of remedial treatment and remedies for sick persons, also of such as are beyond the power of the individual fund to supply, general provision for medical aid, measures with the object of prevention of disease, planning and management of joint institutions for treatment and pharmacies, the appointment of joint officials and organs of inspection, preparation of statistics, The provincial federations and the agricultural sickness insurance funds of the provinces in which there is only one fund are grouped into a single State Federation of the agricultural sickness insurance funds.

(b) *Land Workers' Insurance Institutes.* — Accident and disablement insurance within the limits of land workers' insurance are effected by a landworkers' insurance institute attached to the Government.

On the proposals of the provincial governments concerned by order of the Federal Minister for Social Welfare land workers' insurance institutes are to be set up for the provinces of Vienna, Lower Austria and Burgenland, Upper Austria, Styria, Carinthia, Salzburg, Tyrol and Vorarlberg or for groups of such provinces. Their sphere of work may be outlined as follows :

The land workers' insurance institute has to supervise the fixing and collection of the premiums for all branches of insurance, to verify claims arising in connection with accident and disablement insurance, as well as to regulate the collaboration of the agricultural sickness insurance funds in the work of verification of claims and in the supervision of the recipients of pay. It has to make the compensation payments arising from accident and disablement insurance, to carry out the classification and supervision of the recipient, to arrange for the remedial treatment, so far as it is not left to the agricultural sickness insurance funds. It regulates the relations between itself and the agricultural sickness insurance funds (or federations) in respect to hygienic measures, the extension of medical treatment and in particular the control of epidemics, as well as in relation to the establishment and maintenance of joint cure establishments and convalescent homes.

The land workers' insurance institute administers the funds of the institution and prepares the bases for the investigation of the adequacy of the premiums for accident and disablement insurance.

The current business is done by the board of directors of the land workers' insurance institute, which is composed of ten representatives of the employers and the employees respectively, as well as of four representatives of the public administration. The conduct of all the business of the institute falls on this body, so far as the general meeting or the pensions committees are not competent. In particular the decision as regards the remunerative investment of the available capital belongs to the sphere of the board of directors.

The pensions committees to be appointed within the land workers' insurance institute consist of one representative of the employees and employers respectively and an officer of the institute. These committees have to decide on claims made by an insured person or his survivors against the institute.

While the fourth section on the Law of insurance of land workers is of a purely technical nature and relates to the making of applications and the giving of notice and the consequent obligations on the employers, the sixth section is very important as it deals with the raising of funds and accordingly with the financial side of land workers insurance.

Insurance Premiums. — It is enunciated as a primary principle that the available means for meeting the compensation payments for sickness insurance, accident insurance and disablement insurance not including the supplements from public funds, for administration expenses of the different insurance bodies and for the for-

mation of the reserves required by the law must be supplied from premiums. The premiums in the obligatory insurance for sickness are to be paid by the employer and the insured person in equal parts, provided that there are no peculiarly unhygienic conditions on the farm on the ground of which the employer has to pay out of his own resources a supplement to the sick insurance premium. The premiums for disablement insurance are usually paid in the same way in equal parts by employer and insured person while the premiums for accident insurance are paid two-thirds by the employer and one-third by the employee. The insurance premiums are graded according to the wage class. The basis for the calculation of the insurance premiums is the lower limit of the daily wage in that wage class in which the insured person is enrolled, the limit in the first class being fixed at 6 *groschen*.

The amount of the premium to be paid for sickness insurance is fixed by the regulations of the agricultural sickness insurance fund and may also be differently fixed according to the area of the fund's operations. In the case of those insured persons who also come under legal unemployment insurance, the premiums covering the costs of unemployment insurance are collected with the premiums for sickness insurance.

The premium for accident insurance is paid for the present weekly at the rate of five per cent. of the premium basis, for disablement insurance at the rate of 20 per cent. Managers of forest undertakings have to pay an accident branch supplement for the accident insurance of the forest workers employed by them, which is fixed for the present at four-twentieths of the premium basis. The employers are obliged to pay the full premiums due for the persons in their employ who are compulsorily insured at the times fixed for payment to the competent agricultural sick insurance fund. The land workers' insurance institute supervises the regular and complete payment of the premiums and for this purpose it is empowered to inspect at the agricultural sickness insurance funds during business hours books and other documents relating to the classification of insured persons and the collection of premiums.

Payment of Compensation Allowances. — Sick pay is paid weekly at the end of the week. Single compensation payments are made within one week after the claim has been authenticated. Accident pay and disablement pensions are paid in monthly instalments in advance. The land workers' insurance institute makes the payments including the supplementary allowances out of public funds. In regard to errors in calculation and payment of arrears of the supplementary allowance the Federal Minister for Finance in agreement with the Federal Minister for Social Welfare gives the necessary instructions.

* *

The Austrian Law on insurance of land workers comes into force on 1 January 1929, apart from the work preparatory to insurance, and so far as no other dates must be observed. Hence the provisions of the law in regard to sickness insurance come into force on 1 January 1930 in the federal provinces Burgenland, Styria, Upper Austria and Salzburg, so far as an earlier date for commencement is not fixed by an Order given by the Federal Minister for Social Welfare in agreement with the Federal Minister for Agriculture and Forestry on the proposal of the Governor of the province concerned. The beginning of disablement insurance of agricultural and forestry workers is fixed by Order of the Federal Minister. This Order cannot be made before the beginning of the general Austrian workers' insurance.

It is not at present possible to say whether the date for the definite coming into force of the provisions of the general Austrian workers' insurance, since the coming into force of the Austrian social insurance for workers is bound up with the realisation of a whole series of economic conditions. Among these ranks in the first place the achievement of a minimum unemployment figure, which unfortunately in existing circumstances cannot be reckoned on. In spite of this the hope must be expressed that as soon as ever possible such social and economic conditions will be realised as to give the Austrian working class a social insurance which has no lacunae.

OTTO SIEGEL.

MARKETING OF AGRICULTURAL PRODUCE

The Problem of the Grain Monopoly in Latvia.

The Union of the rural communes of Latvia has decided to submit to the Government a suggestion for the introduction of the monopoly of grain. The working out of this proposal in detail has been entrusted to Prof. P. STARCS who has published a memorandum entitled "The grain monopoly as the means of improving the national agricultural situation" (*Labības monopols kā mūsu lauksaimniecības stāvokļa uzlabošanas līdzeklis*). In this memorandum the author has dealt with the necessity for a stabilisation of the grain market, and he regards the grain monopoly as one of the most appropriate methods of solving this problem.

The grain monopoly must be based on the following fundamental principles :

1. The object of the monopoly of grain is :

(a) to maintain an assured supply of breadstuff cereals for the Latvian population ;

(b) to stabilise the home grain market as well as the importation of grain ;

(c) to stabilise the price of grain and consequently the price of bread ;

(d) to create conditions favourable for grain growing in Latvia.

2. The grain monopoly includes rye and wheat.

3. The grain monopoly cannot be used as a means of enriching the State coffers.

The State is only permitted to carry on trading operations in wheat and wheat flour yielding a revenue which would be equal to that which the customs duty on wheat and wheat flour has produced in recent years.

4. The grain monopoly for wheat and rye must ensure to the farmers of Latvia the minimum price covering the average production costs under Latvian agricultural conditions.

5. The minimum price for the purchase of home-grown cereals must be fixed a year in advance.

6. The purchase of home-grown cereals of equal value must be made on the basis of equal prices.

7. All acquisition of home grown-grain is administered by the Office of the Monopoly and supervised by the Ministry of Finance.

8. A Committee of experts is attached to the Office and is engaged in the preparation of a scheme of minimum prices. Each year before the harvest is reaped, it makes enquiry into the probable course of the wheat and rye market; this Committee is also responsible for ascertaining the quality of the commodity.

9. Prices for purchase of home-grown cereals should be approved by the Cabinet of Ministers.

10. The grain monopoly is administered by the Office of the Monopoly or by one of the co-operative organisations under the supervision of the Office.

11. If the administration of the grain monopoly is entrusted to the Office of the Monopoly, the purchase of home-grown cereals and the trading operations must be entrusted to agricultural co-operative organisations which will receive the necessary grants in aid.

12. The Office of the Monopoly gives credits which will not be large to co-operative organisations for the requirements of drying and screening of grain, as well as for the arrangements for classifying the grain by localities.

13. The grain market is an open one and the growers deliver the grain to the Office of the Monopoly, or else they sell it on the open market.

14. The Office of the Monopoly takes all necessary precautions for ensuring to the needy population of Latgale the provision of grain at low prices.

In regard to the question of the grain monopoly or of the stabilisation of the grain market apart from monopoly, the author presents five variants of his statement as follows :

1st Variant.

The stabilisation of the grain market without the aid of a monopoly is effected by licences to importers to buy a quantity of imported grain in a fixed proportion to the quantity of home-grown grain at a price which must not be inferior to the cost of production of grain in the country itself.

Under this variant, the Government, in issuing licences for the importation of grain, has to fix the proportion between the purchases of home-grown grain and of imported grain.

In order that the proportion may be equitably fixed the Government must determine in advance the quantity of grain required for consumption for each year, that is the quantity of home-grown and of imported grain which will be required for the consumption of the population.

Calculations of the proportion which corresponds to the real situation are very difficult to make. The fixing in advance of the quantity of grain required for consumption is an estimate of probabilities ; the fact is that the consumption of grain may depend on unforeseen circumstances. In the same way, it is very difficult to fix in advance the total production of the grain harvest, and, consequently, the quantity of grain available for the market. Mistaken calculations may cause very great difficulties in the distribution of grain.

If the quantity of home-grown grain is fixed too low the farmers will have difficulty in disposing of their grain. If there is an appreciable difference between the price of imported grain and the minimum price of home-grown grain, merchants can only buy the quantity of home-grown grain which is strictly necessary. In these conditions, the farmers will not have the possibility of selling their grain at the minimum and compulsory price.

On the other hand, if the quantity of grain available for the market is estimated at too high a figure, the importers cannot have the possibility of acquiring the necessary amount of home-grown grain for satisfying the requirements of consumption.

But as the State must ensure the desired quantity of bread-grain, it is necessary that permission to import grain should be given to the Government and that the proportion between the imported grain and the home-grown grain should be changed. If the difference of price between the imported grain and the home-

grown grain is rather large, the merchants who have large stocks of grain at their disposal might suffer losses from the fact that the Government had given permission to import grain from abroad on advantageous conditions. As the safety of the State requires that there should be sufficient reserves of grain at any time, the Government cannot permit that the reserves of grain purchased should be exhausted before the issue of the licenses.

The importation of grain must be effected in more favourable conditions, notably before the harvest is gathered. But in Latvia, the grain market opens later than in the West, where the climate is milder. If they wait for the market of the country, the merchants may lose opportunities of buying grain more cheaply on the foreign market.

After the harvest, while waiting for prices to rise, the grain growers may abstain from putting their produce on the market and thus create difficulties for the importers in their purchases of home-grown grain in the desired quantity.

If the prices in the world market tend to fall, so that the difference between the minimum price of home-grown grain and the general price of wheat results in there being a quantity of grain at prices lower than the purchase price of home-grown grain, great disturbances might be produced on the grain market. In this case the producers may sell their grain by private agreement and ensure their own consumption by buying grain on the market. It might happen that such conditions would lead to an abusive speculation which would drive the honest merchants from the market.

In view of these considerations, the conclusion may be as follows:

The stabilisation of the grain market in accordance with the 1st variant cannot give satisfactory results in the circumstances of Latvia.

IInd Variant.

Stabilisation of the grain market without the aid of monopoly by issue of licences on such conditions that the importers must purchase a quantity of home-grown grain in a proportion fixed in advance and in accordance with the minimum price of grain purchased by the Government to be consigned to the importers.

In this method, there is no monopoly, because the farmers may sell their grain to anyone. The farmers have the right to sell their grain to the State at the price fixed by the law, and this price cannot be lower than the cost of production.

The producers have the option of selling their grain to private merchants, if they find it profitable to do so.

Such a method is very satisfactory for the grain-growers.

It only remains to explain it from the point of view of the interests of the State and to consider the difficulties of carrying it out.

In Latvia, such a stabilisation of the grain market is more difficult than in Switzerland owing to the fact that the home-grown grain plays a more important part than in Switzerland. The grain production is usually larger than in Switzerland and in years of good harvests Latvia has no need to import rye.

This fact shows the Government that difficulties may occur in the determination of the crop, and of the proportion between home-grown and imported grain.

Moreover, abuses are possible under this system. In the event of prices of grain on the world market being very low, the sale prices of home-grown grain on the national market may be lower than the cost of production at which the Govern-

ment purchases the grain grown in the country. In these circumstances it may happen that imported grain is delivered to the Government instead of home-grown grain, or that the whole of the crop is delivered to the Government and the producer buys cheap grain on the market for his own consumption. To avoid the occurrence of such abuses a strict regulation of the grain market would be necessary.

These well defined cases show that it is impossible to avoid price fluctuations and advances in the price of grain for the consumer.

The method in accordance with which the State is expected merely to purchase their grain crop from farmers with a view to subsequent resale to private importers for sale to consumers is satisfactory in so far as it secures the interests of the grain growers, but it does very little for the consumers.

Taking these objections into account, Latvia cannot be said to be in a position to satisfy all its own requirements.

IIIrd Variant.

The grain monopoly understood as the exclusive right of the State to import grain and as the duty of purchasing the home-grown grain at the cost of production.

This is monopoly in the widest sense, as has been maintained in Switzerland and in Norway.

This monopoly accords the widest measure of protection alike to the trade in grain and to its cultivation, and it safeguards the interests also of growers and consumers. There is a very marked opposition to the introduction of this form of monopoly by interested persons.

IVth Variant.

Monopoly importation rights together with the duty of purchase of home-grown grain at a price which shall not be lower than the minimum price fixed by the Government, the administration of the monopoly being in the hands of a social organisation under Government control.

An administration of this type was contemplated by the Swiss Federal Council in the scheme on which the people of Switzerland were invited to pronounce on 4 December 1926.

The fundamental principle of this administration is that the monopoly system should be placed in the hands of social organisations, and not entrusted to the official State services, in view of the fact that social organisations have more elasticity than State authorities.

It is thus of primary importance to find a social organisation to which the administration of the monopoly can be entrusted.

The Swiss bill contemplates the establishment of a special organisation under the direction of the agricultural co-operative societies and the cantonal authorities. It seems that such an organisation would answer the purpose indicated.

If such a system were established in Latvia, it would be preferable to place it in the hands of one of the existing co-operative societies which has already displayed in its activities the necessary qualities.

It is clear that the State must give a measure of financial support for the maintenance of this system of monopoly.

Vth Variant.

The monopoly of importation of grain in accordance with which the Government is expected to stabilise the grain market by means of the imported wheat. In this monopoly system the compulsory purchase of home-grown wheat by the monopoly and by private trading is not contemplated.

This is the system of trading in grain contemplated in Germany by the "Antrag Kanitz".

The proposal in question was criticised at the time by the press, and the competent authorities refused to recognise such a method of grain trading.

Prof. Starcs endorses the objections made to this system. The monopoly of imported grain can really do nothing for farmers for the reason that it cannot guarantee the sale of home-grown grain.

FARM ECONOMICS

Economics of Small Mixed Farming in Australia.

Considerable concern has for some time past been expressed in Australia at the increasing discrepancy between cost of production of wheat and the price at which it can be sold. A fair estimate of the present cost of production is 4s. 8 ½d. per bushel, the estimate of the Turretfield demonstration farm for 1927-28 being 5s. 1s., while the price of wheat in 1929 went as low as 3s. 9d. but towards the end of the year was quoted at 4s 6d. per bushel.

The remedy usually urged on the Australian wheat farmer is increase of yields which are very considerably lower than those obtained in Europe and compare unfavorably with those of Canada; 15 bushels per acre or even less is regarded as a fair average in Australia while in Canada the average is 17 (1).

The alternative of abandoning monoculture and taking up mixed farming is one which will recommend itself to a certain number of farmers, and in this connection an address of great interest was lately delivered to an agricultural conference in South Australia by the Director of Agriculture in that State, taking as his subject the economic position of mixed farming especially as practised in the Southern districts of South Australia.

In effect the conclusions are limited to the results of *small* mixed farming, all data, returns etc., representing averages obtained from six small farms on which mixed farming has been successfully carried on, the average area of these farms being 287 acres.

The mean data of the farms are as follows:

TABLE I. — *Mean Data for a Small Mixed Farm.*

Extent	acres	% of total	Value	£	%
Mean area	287	--	Land	2,952	55.77
Mean area arable	263	91.52	Improvements	1,392	26.29
Mean area under crop . .	123	42.80	Farm plant (includ. ing horses)	729	13.77
Mean area fallowed . . .	58	20.15	Revenue earning livestock	221	4.17
			Capital	5,294	100.00

(1) The weight of a bushel of Australian wheat may vary as much as from 60.25 lb to 64.5 lb. It may be taken roughly as 62 lb., 15 bushels thus equalling about 4.22 quintals, the yield being thus the equivalent of about 10.5 quintals per hectare. A bushel of oats weighs from 38 to 40 lb

Revenue-earning livestock		Assumed cropping	
Sheep.	112 head (110 ewes)	Wheat.	40 acres
Cattle	5 cows	Oats	40 acres
Pigs	2 sows	Pease	40 acres
Fowls	108 head	Grazing crops	3 acres

By "fallowed" is meant the bare "worked" fallow (after deep ploughing) which is the Australian practice. Some part of the arable area not accounted for is presumably used in rotation for grazing, the animals also grazing on grazing crops. It will be remembered that in Australia grass tends to be very rapidly burnt up and does not yield a hay crop; hence some part of the cereal crops is always cut green and fed to stock as "hay".

In the following estimates it is assumed that the farmer and his family are wholly responsible for all manual operations; hence there is no wages bill. The object is first to estimate the mean probable returns from a farm such as is indicated above, next to estimate probable expenditure, and then to determine the credit balance that should remain for meeting the claims of depreciation, interest on capital and for remunerating the labour of the farmer and his family. The possibilities for improvement of the farmer's position are the final consideration.

The mean returns that might be expected from a farm of this type may be shown as follows:

TABLE II. — *Mean Probable Returns from a 287-acre Mixed Farm.*

From Farm Crops.		£		
		s		
		d.		
Wheat	— 24 acres — 15 bush. per acre at 4s. 6d.	81		
	— 16 acres — 2 tons "hay" at 40s.	64		
Oats	— 14 acres — 20 bush. per acre at 2s. 6d.	35		
	— 26 acres — 2 tons "hay" at 40s.	104		
Pease	— 40 acres — 20 bush. at 5s.	200		
		484		
Farm Livestock		£		
		s		
		d.		
Sheep	— 72 per cent. lambing — 79 lambs at 20s.	79	0	0
	— 112 fleeces — 10 lbs. at 1s. 4d.	70	0	0
	— 27 ewes cast for age at 25s.	33	15	0
Cows	— 450 gallons (1) of milk per cow at 9d.	84	7	5
	— 5 calves, 6 weeks' old at 30s.	7	10	0
Pigs	— 30 bacon pigs at 80s.	120	0	0
Fowls	— 100 hens — 700 dozen eggs at 8d. per doz.	23	6	8
		417	19	1
Estimated gross value of production		901	19	1

(1) About 4515 lbs., a low yield.

To obtain the net value of the production, the following deductions must be made : (a) the estimated value of seed retained for sowing ; (b) the estimated value of farm products fed to live stock ; and (c) the estimated value of the lambs kept to replace ewes cast for age, or in other words the value of flock replacements.

The estimated values of these deductions is shown in the following table.

TABLE III. — *Values of Deductions to be made from Value of Gross Farm Production.*

Seed requirements		£	s.
Wheat	— 60 bush. at 4s. 6d.	13	10
Oats	— 80 bush. at 2s. 6d.	10	0
Pease	— 80 bush. at 5s.	20	0
		43	10
Fed to Stock			
7 horses	- 5 tons of hay each at 40s.	70	0
5 cows	— 2 tons of hay each at 40s.	20	0
	— 36 bush. oats at 2s. 6d.	22	10
112 sheep	— 5 tons of hay at 40s.	10	0
	— 20 bush. oats at 2s. 6d.	2	10
Pigs	— 300 bush. of wheat at 4s. 6d.	67	10
		192	10
Flock Replacements		£	s d
27 lambs	at 20s	27	0
		263	0
Estimated gross value of farm production		901	19 1
Less Seed, produce fed and flock replacements		263	0 0
Estimated net value of farm production . . .		638	19 1

In the above table it will be seen that all the wheat and most of the oats apart from seed requirements are considered as fed to stock, while pease and hay are the main crops marketed. In actual practice the distribution would be modified according to circumstances and market conditions. It may be remarked in reference to Tables III and IV that the stock feeds are procured from the farm and that there is little if any purchase of concentrated feeds.

To obtain the mean net earnings of the farmer, his family and his capital there must be deducted the mean cash expenditure and mean depreciation.

TABLE IV. — *Estimated Mean Cash Expenditure and Mean Depreciations.*

Expenditure			
	£	s.	d.
Superphosphate — 80 lbs. per acre for 123 acres			
at 5s. 6d. per cwt. (112 lbs.)	24	3	3
Bags — 352 at 1s. each	17	12	0
Twine for bags — 0.3d. per bag		11	5
Binder twine — 1s. 6d. per ton of hay	6	6	0
Copper sulphate — 0.5d. per bushel of seed		8	4
Repairs to plant — 1s per acre	14	7	0
Rates and taxes — 1s. per acre	14	7	0
Sundries	10	0	0
		87	15
Estimated mean depreciation			
Buildings — 2.5 per cent. on £1.035	25	17	6
Fencing — 2.5 per cent. on £236	5	18	0
Implements and Tools — 7.5 per cent. on £429	32	3	6
Horses — 6d per acre	7	3	6
Sheep — 5 per cent. on £146	7	6	0
Cows — 5 per cent. on £50	2	10	0
		80	18
		168	13
Estimated value of net production	638	19	1
Less Estimated value of expenditure and depreciation	168	13	6
Estimated net earnings of the farmer, his family and his capital	470	5	7

As regards the interest charges on capital invested the result of careful enquiries into the position of 129 South Australian farms of varying areas has shown that on the smaller farms the interest charges are much higher than on the large farms, the charge per acre corresponding to a farm of 287 acres being 19s. 2d. (as compared with 3s. on a farm of 3,500 acres). Hence the total interest charges are represented by £275 os. 10d. The net earnings of the farmer and family are thus £195 4s. 9d.

A further calculation which is admittedly only approximate relates to the value of the farm produce consumed by the farmer and family, an amount which is included in the above figure representing earnings of farmer and family, and must be deducted from the net farm production if it is desired to obtain the net cash receipts. It may be of interest to reproduce the estimate of the items of farm produce reckoned as consumed by an average farming family.

	£	s	d
One sheep per two weeks at 25s.	32	10	0
Two pigs at 80s.	8	0	0
365 gallons of milk at 9d.	13	13	9
210 dozen eggs at 8d.	7	0	0
	61	3	9

Hence the actual cash earnings of the farming family are £134 1s. To the earnings in cash and kind may be added a sum of £52 representing rent at £1 per week of the house which the family occupies rent-free, bringing the total earnings in cash and kind up to £248 approximately. If the farm is free of debt, then the interest on the capital forms an available part of the family income, or if only a portion of the capital is borrowed then a proportionate part is available.

It is clear that the farmer will improve his position if he can find a way to reduce costs of production. It is the general expert opinion in Australia that reduction in production costs can only be achieved by means of *increase in production per unit*. Wheat yields are undoubtedly low, and in regard to the average farm under consideration it is estimated that it should be possible to effect an increase in the wheat yield from 15 to 20 bushels per acre (*i. e.*, an increase from about 10.5 to 14 quintals per hectare), and to increase the oats yield by half as much again, at a total cash expenditure not exceeding £10, while the additional net revenue thus secured would be from £33 to £34. The milk yield could probably be nearly doubled.

C. H.

* * *

PERKINS Arthur J. (Director of Agriculture, South Australia), *The Economics of Mixed Farming. Journal of the Department of Agriculture of South Australia*. Vol. XXXIII, Vol. XXXIII, No. 2. Adelaide September 1929.

Income from Agricultural Production in the United States.

From the results of the annual analysis of receipts and expenditures for the agricultural industry, as a whole, in the United States, it appears that for 1928-29 there was an improvement of approximately 2 per cent. in the gross agricultural income as compared with 1927-28 and a slight improvement in the net agricultural income.

The gross income was 12,527 million dollars in 1928-29 as compared with 12,304 millions in 1927-28. This income is measured by the value of production less feed and seed requirements in terms of weighted average crop-year prices paid to producers at the farm. It includes products sold and products consumed on farms for family living. It does not include live stock and seed purchased from other farmers, either directly or through the central markets, nor does it include depreciation or appreciation in inventories of capital investment or of farm products.

The increase in gross income from agricultural production in the past year represents a greater cash income from sales, amounting to \$9,949,000,000 compared with \$9,870,000,000 in 1927-28, and also a greater value of food consumed on farms. The improvement in gross income was chiefly amongst producers of live-stock and livestock products. Cotton producers received about the same money returns as in 1927-28, while grain and fruit and vegetable growers, particularly growers of wheat and potatoes, received gross incomes less than in the preceding season.

The gross income from farm production in each year from 1910-20 to 1928-29 is shown in Table I (page 30).

Net income available for interest on all capital employed in agriculture and for paying farmers for managing the industry increased from \$2,716,000,000 in

TABLE I. — *Gross Income from Farm Production in each year from 1919-20 to 1928-29.*
(In millions of dollars).

Year	Gross income from farm production		
	Total	Value of food and fuel consumed on farms	Cash income from sales
1919-20	15,719	2,887	12,832
1920-21	12,688	2,645	10,023
1921-22	9,214	2,129	7,085
1922-23	10,366	2,168	8,198
1923-24	11,288	2,360	8,928
1924-25	12,008	2,327	9,676
1925-26	12,670	2,535	10,135
1926-27	12,127	2,590	9,537
1927-28	12,804	2,434	9,870
1928-29	12,527	2,578	9,949

1927-28 to \$2,754,000,000 in 1928-29. The fact that the increase in net income is smaller than the increase in gross income is due to greater expenditure for production, particularly for fertilizer, feed and machinery.

The net income represents an average income per farm operator available for labour, capital and management of \$901 compared with \$896 in 1927-28. These earnings are exclusive of the residential value of farm dwellings. If the average value per farm dwelling be placed at \$1,000, the additional income represented by the residential value would be approximately \$50 per farm. If a conservative interest allowance is made for the operator's net capital investment, it results that the reward for the operator's labour and management averaged \$669, as compared with \$668 in 1927-28. If the operator and his family are allowed a wage equivalent to that of hired labour, the average rate of return earned on the farmer's own investment, including reward for management, was about 3.7 per cent. compared with 3.6 per cent. in 1927-28.

The rate of return earned on all capital invested in agriculture, after paying all operating expenses, including taxes, and allowing a wage to operators was 4.7 per cent. in 1928-29; the rate of interest paid on mortgage and other indebtedness was 6.4 per cent. and the rate paid on the value of cash-rented and share-rented property was 7.3 per cent. The average returns for agriculture may be compared with the rates earned by industrial corporations; 900 corporations having an aggregate net worth of \$23,000,000,000 showed in 1928 net profits, exclusive of payments for management, amounting to 12.1 per cent. The average reward for farm labour and management per farm, including an allowance of \$60 for the residential value of farm dwelling, was \$729 in 1928-29 and the average wages of farm labourers per year, without board, were \$584; these figures may be compared with the average earnings per person employed in factories, which were \$1,330.

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Crops and Markets (published by the United States Department of Agriculture), Vol. 6, No. 7, Washington, D. C., July 1929.

Returns from Farms Operated by Owners in the United States.

The United States Department of Agriculture has published the results of its inquiry into the returns from owner-operated farms in 1928.

The average gross receipts of the 11,851 farmers reporting were \$2,068, consisting of \$946 from sales of crops, \$936 from sales of livestock, \$689 from sales of livestock products, and \$37 from miscellaneous other items.

Average current cash expenses of these farmers totalled \$1,518, consisting of \$394 for hired labour, \$238 for livestock bought, \$262 for feed bought, \$67 for fertilizer, \$46 for seed, \$184 for taxes on farm property, \$151 for machinery and tools, and \$176 for miscellaneous items.

Receipts less the expenses above mentioned averaged \$1,090, to which must be added the estimated value, \$269, of the home-grown food-products used by the farmer. The value of fuel used and of house rent was not reported. On the other hand, the total expenses, \$1,518, do not include any allowance for the labour of the farmer and his family, which was estimated by the farmers at an average value of \$768.

The inventory value reported showed an average increase during 1928 of \$244 which, together with the cash balance of \$1,090, makes a return from the farm amounting to \$1,334. This is called the "net result", and serves as a starting point for computing the income of the farmer, as distinguished from the return of the farm itself under his operation. From the "net result" one of the first deductions to be made is an average cash payment of \$202 or interest on indebtedness, besides which \$126 was reported as spent on improvements.

Table I shows the average returns of owner-operated farms in the United States in the years 1922 to 1928 and Table II (page 32) similar returns for the year 1928 in the different geographical divisions.

TABLE I. — *Average Returns of Owner-Operated Farms in the United States in the years 1922 to 1928.*

	1922	1923	1924	1925	1926	1927	1928
Number of reports	6,094	16,183	15,103	15,330	13,475	13,850	11,851
Size of farm - acres	252	298	303	304	315	275	284
Value of farm real estate, Jan 1	\$ 13,586	\$ 14,530	\$ 14,323	\$ 14,157	\$ 13,379	\$ 12,552	\$ 12,299
Value of farm personality	2,844	2,060	2,037	2,065	2,929	2,893	3,118
Receipts:							
Crop sales	816	850	1,012	993	920	978	946
Sales of livestock	660	760	780	897	894	851	936
Sales of livestock products	454	550	570	585	580	638	689
Miscellaneous other	42	80	72	76	39	38	37
Total	1,972	2,240	2,434	2,551	2,448	2,505	2,608
Cash outlay:							
Hired labour	331	350	384	386	386	397	394
Livestock bought	204	240	222	242	242	238	288
Feed bought	175	210	248	244	232	243	262
Fertilizer	57	60	66	69	73	64	67
Seed	43	40	44	47	48	49	46
Taxes on farm property	174	190	192	191	183	180	164
Machinery and tools	123	110	103	119	130	129	151
Miscellaneous other	150	150	151	179	179	157	176
Total	1,257	1,350	1,410	1,477	1,473	1,457	1,518
Receipts less cash outlay	715	890	1,024	1,074	975	1,048	1,090
Increase in inventory of personal property	202	130	181	223	158	242	244
Net result	917	1,020	1,205	1,297	1,133	1,290	1,334
Interest paid	(1)	230	230	225	215	201	202
Spent for farm improvements	(1)	140	133	131	128	141	126
Estimated items:							
Value of food produced and used on farm (2)	294	265	266	274	282	273	269
Value of family labour including owner (2)	716	870	789	793	779	769	768
Change in value of real estate during year	— 52	— 66	+ 145	+ 173	+ 2	+ 49	+ 73

(1) Not reported for 1922. (2) Averages of farms for which the item was reported.

The average size of the farms which reported is higher than the average size of farms as given by the census. Few reports were received from farms of less than 50 acres, whereas the size groups beginning with 100 acres were well represented. The average values of property are also higher than the average values as given by the census. The figures may, however, be taken as representative, in the sense that the farms included are large and small, profitable and unprofitable; they produce prevailing types of products and are located in all parts of the country in about the same proportions as all farms operated by their owners. Farms operated by tenants are not included in the inquiry.

* * *

Crops and Markets (published by the United States Department of Agriculture), Vol. 6, No. 7, Washington, D. C., July 1929.

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[By a systematic examination of the various institutions and functions in which public administration takes concrete and external form, the author succeeds in presenting a valuable general view of the universal rules governing the arrangement and exercise of administrative action in its various forms. The work deals in succession with institutions, staff and methods, with special stress on essential questions, including that of the scientific management of work. An extensive bibliography is added, which is intended for readers who desire to make a more complete study of some one or other aspect of the problem].

O'BRIEN, George. *Agricultural Economics*. London 1929: Longmans, Green and Co. viii + 195 pp.

[Beginning his study of agricultural economics with a discussion of the formation of agricultural prices in general and the prices of particular agricultural products, the author quickly comes to the question of the costs of production in agriculture. This question, which includes the costs of marketing, is treated at some length. The author then proceeds to discuss the ways in which the prosperity of the agricultural industry may be assisted by action on the part of the State, distinguishing between State assistance to the science, to the craft and to the business of agriculture, and protective agricultural policies. A final section on international assistance of agriculture contains appreciative references to the work of the International Institute of Agriculture.

The work makes little original contribution to the science of agricultural economics, being based in the main upon published documents. It forms, however, a useful textbook and the copious references in foot-notes to the sources from which the author's statements are drawn make it a valuable guide to the literature on the subject].

PATTON, H. S.: *Grain Growers' Co-operation in Western Canada*. Harvard Economic Studies, Vol. XXXII. Cambridge (Mass), Harvard University Press, 1928. ix + 460 pp.

[The story of the development of wheat growing in Canada, which was rendered possible by the introduction of suitable varieties of wheat and by the construction of a network of railways, is told by Mr. H. S. Patton in "Grain Growers' Co-operation in Western Canada". The author describes the difficulties which the pioneer wheat-growers experienced in the marketing of their produce and studies in detail the organisations which were successively formed, first for the protection of the wheat-growers' interests and afterwards for the storage and marketing of the grain. A full account is given of the constitution, methods and business policy of the so-called Wheat Pools — the Alberta Co-operative Wheat Producers Limited, the Saskatchewan Co-operative Wheat Producers Limited, and the Manitoba Co-operative Wheat Producers Limited, with their central selling agency, the Canadian Co-operative Wheat Producers Limited — as well as of the older organisations, the United Grain Growers Limited (formed by the amalgamation of the Grain Growers' Grain Company and the Alberta Farmers'

Co-operative Elevator Company) and the Saskatchewan Farmers' Co-operative Elevator Company. Incidentally the book throws considerable light on various problems of grain marketing and shows how the farmers' organisations were compelled to adopt practices which the farmers had previously condemned as abusive when adopted by grain merchants. A valuable series of appendices includes the text of a typical agreement entered into between a provincial wheat pool and the growers who are members of it, the agreement between the provincial wheat pools and the central selling agency, a bibliography and a chronological table of the grain growers' co-operative movement].

AGRICULTURAL LEGISLATION

Summary of Laws and Regulations.

RUMANIA — Lege pentru încurajarea initiativei private în sericicultură — 5 August 1929 — Monitorul Oficial, N° 183 (20 August 1929).

[This law, with the object of encouraging private initiatives for the promotion of silk-worm breeding, authorizes the Ministry of Agriculture and Domains to grant societies and private individuals for a period of 20 years and in certain determined districts the following exclusive rights: — (a) to import from abroad by the intermediary and with the approval of the Minister at the expense of the grantee, the amount of silkworm eggs necessary for breeding in the district in question, (b) to distribute the eggs imported among the breeders of the particular district, the Ministry reserving to itself the right to grant individual applications for silkworm eggs addressed directly to him by breeders for their own particular needs, (c) to found and put into operation installations of an improved type for spinning and drying cocoons. It is optional for breeders to use these installations but they can only create them for cocoons of their own production, (d) to export the cocoons in accordance with certain conditions laid down by the law.

One half the quantity of cocoons obtained by the concession holder for the region in question must be placed at the disposal of the national factories through the intermediary of the Ministry of Agriculture and Domains, which shall fix the sale price, whereas the other half may be exported. Concession holders have also the right to spin in the national territory and by means of their own installations one half the cocoons they have for exportation].

UNION OF SOUTH AFRICA — Regulations No. 1361 in respect of the export of eggs. — 26 July 1929 — The Union of South Africa Government Gazette No. 1799 (26 July 1929)

[These Regulations which are issued in substitution of those issued on 6 July 1928 order that the eggs of ducks and hens must be placed in separate cases. Each case must be full and must contain 30 dozen eggs. These cases must satisfy the requirements laid down as regards size and make-up and must be properly branded with an indication of the contents. When eggs have been examined and passed for export and the grading has been approved, the case shall be marked on one end with a distinguishing official mark by the inspector who shall at the same time issue to the exporter a certificate of export. Rules are laid down for the proper handling and conveyance of the eggs prior to shipment].

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PART II

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OF

AGRICULTURAL ECONOMICS AND SOCIOLOGY

CO-OPERATION AND ASSOCIATION

The Basis of Payment for Produce in Co-operative Marketing Associations in the United States.

In co-operative marketing associations there are certain difficulties in determining the price to be paid to members for the produce delivered by them to the association. Even in the simplest case, where the produce delivered by each member is separately sold and the exact price obtained for it is known, the question arises in what proportions the expenses of marketing are to be charged to the members. When, however, as usually occurs, the produce delivered by a member is mingled with similar produce delivered by other members and all such produce is sold together (1), there is the further and more difficult problem of determining what proportion of the total returns obtained by the sale of the produce is to be paid to each member. In this article we shall endeavour to show the various solutions which have been found for this problem by the co-operative marketing associations in the United States, setting aside the less difficult problem of pro-rating expenses.

The principle upon which the total receipts should be distributed is clear enough. Each member should receive for his produce the average price of the particular kind and quality which he delivered. But we must first fix the period over which the average price is taken (2). This period may be a single day, several days, a week, a fortnight, a month, several months, or even a whole year. We shall see presently what considerations determine the length of period to be chosen. Assuming that the period has been determined, we may say that the price to be paid to a member for produce delivered is the average price obtained during the determined period for produce of the same kind and quality. We may express this in another way by saying that the total sum resulting from the sale of a particular kind and quality of produce during the determined period should be distributed amongst the members in proportion to the quantities which each delivered during the period.

We have said that it is the usual practice that produce delivered by a member is mingled with similar produce delivered by other members and that all such produce is sold together. In order that the the system may be equitable it is

(1) This is known in America as "the pooling system". In the text of this article we avoid the use of the expressions "pool" or "pooling" because, though they have been adopted by other countries, they are not yet familiar and their exact meaning is not always understood. Even in America the word "pool" is sometimes rather loosely used.

(2) This is called in America "the pooling period".

necessary that produce should be accurately graded, and that only produce of the same grade should be mingled (1). It would obviously be unfair to a member if his produce were mingled with produce of an inferior quality and he were paid the average price obtained for mixed produce of different qualities. There are, however, limits to the extent to which grading can be carried, since an excessive number of grades would complicate the working of the association and cause expense which would outweigh any advantage obtained. Nevertheless, as we shall see, the number of grades is sometimes very large.

When the produce is mingled and the average price obtained for it is paid to the members supplying it, the advantages or disadvantages resulting from market fluctuations during the determined period are distributed equitably amongst the members. One member may deliver his produce at a moment when market conditions are favourable and another when market conditions are unfavourable. If each were paid the price obtained at the time his produce was sold, the one would benefit through no merit of his own and the other lose through no fault of his own. It may even happen that on the same day two lots of precisely similar produce delivered to the association will be sold by it in different markets at different prices; it would clearly be inequitable that of the members who delivered the two lots one should receive a higher price than the other. Besides the risks of price fluctuations, other marketing risks, such as the risk of deterioration while the product is being prepared for market or is in storage or in transit, are distributed among all the members.

The period over which the average price is to be taken is largely determined by the nature of the product. If the product is perishable, so that it must be marketed as soon as it is ready, it is impossible to regulate the supply placed upon the market, prices fluctuate rapidly and short periods are essential. Strawberries may be taken as an extreme example of a perishable product. When they first come into season strawberries command much higher prices than they do in the middle of the season when the market may even be glutted. It would be unfair that the grower who succeeded in producing early strawberries should receive the same price as growers whose produce came on the market in the middle of the season. Hence average prices must be fixed over very short periods, and in practice the period adopted by the majority of co-operative societies for the marketing of strawberries is a single day or a few days. On the other hand, in marketing products like wheat or cotton, which are not perishable and can be placed on the market at any time, the period over which the average price is taken is usually the whole crop-season. Between these two extremes there are many intermediate periods. In the case of milk, for example, the price of which varies according to the season but fluctuates comparatively slowly, the period over which the average is taken is usually a month.

Some large associations divide the area over which they operate into districts and keep the produce of each district separate (2). This may partly be for convenience in handling, or it may be in order to separate qualities, the produce of one district differing in quality from the produce of another in ways of which account cannot easily be taken in grading. Where the association is a federation of local units one of the objects of keeping the produce of each local unit separate is to make the local unit responsible for any lack of care in handling the produce supplied by

(1) In other words, there should be a separate "pool" for each grade.

(2) In such cases, each district would be known as a "pooling area". If produce from the whole area of operations of the association is mingled, it would be said that the "pooling area" is coincident with the area of operations.

its members. Co-operative milk-selling associations sometimes divide their area of operations into zones, according to distance from the centre of consumption, in order that milk-producers having farms near to the centre may not lose the advantage of their proximity to the market.

We shall now consider, in greater detail, how the price to be paid is determined in the case of each of the principal classes of commodity which are marketed co-operatively.

WHEAT. — The determination of the price to be paid for wheat does not present any special difficulty. The wheat is classified according to the recognised grades and the total sum obtained during the crop-season for wheat of each particular grade is divided amongst the members supplying it in proportion to the quantity which each supplied. This is the system adopted by associations which market the wheat on behalf of the members. The co-operative elevators, on the other hand, usually purchase the wheat outright from the members and re-sell it; in this case the price paid is such that the wheat can be re-sold at a margin which will cover all expenses and leave some profit.

COTTON. — Originally all the large co-operative cotton-marketing associations determined the prices to be paid to members by averages taken over the whole season, but in recent years some of them have adopted various systems, leaving to the members the choice of the system under which their produce shall be sold. Thus a member may elect that the price to be paid for his produce shall be determined by the average price obtained for similar produce during the day on which it is sold. Or again some members may prefer that the prices paid for their produce should be determined by the average price obtained during a period of 30 days. In such cases, the average taken is not the average price of *all* produce of the same grade and staple sold on the same day or during the same period, but the average price of the produce of the same grade and staple supplied by members who make the same choice of period. The shorter periods are adopted in order to meet the convenience of members who cannot wait until the end of the season for the final settlement of the price to be paid to them. The use of short periods is facilitated by the existence of the futures markets; it may not always be possible to make a spot sale, and in such case the association sells an equivalent quantity for future delivery. The most common practice is still to take the average price over the whole season as the basis of payment.

The number of classes used by the co-operative cotton-marketing associations is very large. The number theoretically possible is approximately 400, since this is the number of different combinations of grade and staple of Upland cotton in the American classification. The actual number of classes used is, of course, much less than this and varies greatly. Thus during the 1924-25, the cotton delivered to the Oklahoma Association was divided into 65 classes; the North Carolina Association used 96 classes, and the Alabama Association 46. Even in the same association there are great variations from year to year; one association used 76 classes in 1921-22; 56 in 1922-23; 76 in 1923-24, and 120 in 1924-25.

The usual practice has been that cotton of the same grade and staple is mingled and the total sum obtained by the sale of it is divided amongst the members in proportion to the quantities they delivered. In practice, however, it has been found that this system is not always equitable as between growers of different classes. It may happen, owing to market conditions, that the average price obtained by an association for one class of cotton is less than the average price obtained for cotton of

another class which is really superior. In order to effect a more equitable distribution of the sums obtained from the sale of cotton and to encourage the production of superior qualities a method known as "the economic value differential method" has been worked out and put in practice by the Texas association. A scale is drawn up representing the relative economic value of the different classes as determined by the relative market prices. The total receipts from the sale of cotton of all classes are placed to a general fund and this fund is divided amongst the members in proportion to the quantity and the relative value of each class of cotton that they have delivered. Although the scale of values drawn up may be somewhat arbitrary, as it is impossible to fix the relative values with absolute precision, this system seems to be an improvement upon the original system.

FRUIT AND VEGETABLES. — The general practice of co-operative associations marketing fruit and vegetables is to mingle produce of the same variety and grade and pay to the growers the average net price for all similar products marketed during the season or some shorter period, but the length of the period adopted varies greatly, not only between associations marketing different products, but between associations marketing the same product. In a special bulletin on "Management Problems of Co-operative Associations Marketing Fruit and Vegetables", published by the United States Department of Agriculture in 1926, a table was given showing the practice of 478 associations in respect of the length of period over which the average price was taken. We here reproduce this table. It shows the number of associations marketing each different variety of fruit or vegetables, and the percentage of this number which have adopted periods of specified lengths.

TABLE I. — *Relative Use of Periods of Different Durations made by 478 Fruit and Vegetable Marketing Associations in 1922.*

Commodity groups	1 day	2 to 3 days	1 week	8 to 15 days	1 month	One fourth of season	One third of season	One half of season	Season	Asso- ciations report- ing
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Number
Apples	—	2.6	—	—	—	—	—	10.2	87.2	39
Citrus fruit	—	.7	7.3	12.0	22.0	15.3	8.0	4.0	30.7	150
Grapes	—	35.7	—	7.1	—	—	—	—	57.2	14
Strawberries	59.2	7.4	7.4	—	—	—	—	—	26.0	27
Peaches	—	—	14.3	14.3	—	—	—	—	71.4	7
Cranberries	—	—	20.0	—	—	—	—	—	80.0	5
Miscellaneous fruits	—	—	—	—	—	—	—	25.0	75.0	4
Several fruits	11.2	—	12.5	2.5	—	—	1.3	—	72.5	80
Potatoes	14.6	12.5	29.2	8.3	10.4	—	4.2	2.1	18.8	48
Sweet potatoes	—	—	8.0	—	8.0	—	4.0	—	80.0	27
Watermelons	—	83.3	—	16.7	—	—	—	—	—	6
Onions	—	—	—	75.0	—	—	—	—	25.0	4
Miscellaneous Vegetables	18.2	—	9.1	9.1	9.1	—	—	—	54.5	11
Several Vegetables	33.3	4.2	20.8	4.2	4.2	—	—	—	33.3	24
Fruit and Vegetables	21.9	6.3	15.6	3.1	18.7	—	—	—	34.4	32

It is to be noted that for the majority of the commodities the period most commonly used was the whole season. It greatly simplifies the book-keeping of an association to average prices over the season and where the growers are all cultivating fruit or vegetables on the same lines, the distribution of the sales receipts is fairly equitable. The great variety of periods used by associations marketing citrus fruit is noticeable. The California Citrus Exchange uses a period of one month.

Fruit-marketing associations class the fruit by variety and grade and sometimes also by sizes. It is possible however to carry classification by size too far, as is well illustrated by the experience of a co-operative association in New York

which marketed apples in barrels. The usual market practice had been to divide apples into two sizes — under $2\frac{1}{2}$ inches diameter and $2\frac{1}{2}$ inches and over. The association decided to classify the apples by sizes differing by $\frac{1}{4}$ of an inch, but found that buyers preferred the original system. The reason was that retailers had to supply apples of different sizes to different customers and this they were able to do from a single barrel if it contained apples of $2\frac{1}{2}$ inches and over.

In fruit-marketing it occasionally happens that returns for second-grade produce are higher than those received for first-grade produce, and some associations, notably the Northwestern apple-marketing associations, have adopted the "economic value differential system". For a particular variety of apple a series of "differentials" is set up for "fancy", No. 1, No. 2 and other grades, and the total returns for all shipments and all grades are distributed amongst the members in proportion to the quantities of each grade supplied and the "differential" of the grade.

TOBACCO. — In the co-operative marketing of tobacco, the period over which the price is averaged is usually the crop-season. The only special difficulty lies in taking account of the differences which exist between the produce of different districts. This can be overcome by keeping the produce of the various districts separate, or by adopting a sufficient number of grades to enable account to be taken of all essential differences. The latter method was followed by the Burley Tobacco-Growers' Association which classified the tobacco delivered by its members into as many as fifty grades.

LIVE STOCK. — The co-operative live stock shipping associations do not all sell by grade. Many of them sell separately the stock supplied by each member. The principal advantage claimed for the latter system is that when stock is weighed according to ownership at the shipping point and at the terminal market, each lot of stock is credited with the exact amount of shrinkage in weight which has occurred in transit. Live stock from different farms, differently fed before shipment, do not shrink uniformly. Some farmers even give a heavy feed before delivery to the association — a practice which should be discouraged. Experiments made under the supervision of the United States Bureau of Markets have, however, shown that the cost of weighing each supplier's lot separately at the terminal market is such that the advantage of knowing the exact amount of shrinkage of each lot is lost. Moreover in many cases buyers will pay a premium on stock that can be weighed without sorting as it is important to them to be able to ship it without any delay.

Where grading is practised in live stock marketing it is not always possible to sell each grade separately. Live stock of different grades may be sold together at a flat price. This complicates the distribution of the receipts and a method must be adopted resembling the "economic value differential system". The system is thus described and illustrated in a bulletin on "Marketing Livestock Co-operatively" published in 1926 by the Agricultural Experiment Station of the University of Wisconsin :

"Managers who prorate the receipts efficiently grade the live stock at home and watch the market quotations to see what the separate grades sold at on the day the shipment is sold. With this information together with any that the commission firm may write, the manager prepares a set of prices for the grades he had in the shipment. Thus, for example, he sees that all of twenty calves in a load were sold together at \$12 per hundredweight. He sees by the market report that calves sold from \$11 to \$12.75 top, with the general average at \$12. So in prorating the

receipts he uses the best estimate of prices for his stock, which is for five calves of lowest quality \$11.50 per hundredweight, for eleven calves \$12 per hundredweight, and for four extra good calves \$12.50 per hundredweight. This figures out very closely to what the calves actually brought, and is much fairer than paying the General flat selling price to all producers ”.

The example is shown in tabular form as follows :

Actual sale — 20 calves, 7,340 lbs. net weight at \$ 12.00 . . . \$280.50 total	
Prorated	5 calves 500 lbs. net weight at \$ 11.50 . . . » 57.50
	11 calves 1,320 lbs. net weight at \$ 12.00 . . . » 158.40
	4 calves 520 lbs. net weight at \$ 13.50 . . . » 65.00
	20 calves 2,340 lbs. net weight. \$ 280.90

MILK. — There are special difficulties in determining the price to be paid for milk supplied to co-operative milk marketing associations. The general practice is to pay for milk in proportion to the butter-fat content and the period over which the average price is taken is usually a month. But difficulties arise from the fact that milk which cannot be sold as fresh milk must be utilised in a variety of less profitable ways and from the fact that members whose farms are near to the centres of consumption have an economic advantage, even apart from cost of transport, of which they should not be deprived. The endeavour to find a method of determining prices which shall be equitable towards all the members has given rise to some rather complicated systems.

A system of distinguishing between market milk and surplus milk has been devised by the Interstate Milk Producers' Association of Philadelphia, which contracts with its members for delivery of their milk and has agreements with private concerns for converting surplus milk into various milk products. For each month a “ base price ” is determined by a joint conference of producers and distributors. During October, November and December each producer is paid the “ base price ” for the whole quantity of milk delivered by him. The average amount delivered by a producer during these three months is calculated and is known as the “ basic quantity ”. During the months from January to June the producer is paid the “ base price ” for milk delivered up to a quantity equal to the “ basic quantity ”. For additional amounts the producer receives a price based upon the price of New York butter. If the amount of surplus milk does not exceed the “ basic quantity ”, the “ butter price ” plus 20 per cent. will be paid ; for any quantity beyond this limit only the “ butter price ” is paid. In July and August the producer is paid the “ base price ” for an amount up to 110 per cent. of the “ basic quantity ” and in September for an amount up to 115 per cent. of the “ basic quantity ” ; in these three months the “ butter price ” plus 20 per cent. is paid on all surplus milk.

An elaborate system of determining the base price to be paid for milk has been adopted by the New York Dairymen's League, account being taken of all the different uses to which the milk is put. The base price refers to Grade B milk testing 3 per cent. of butter fat at shipping points distant 200 to 210 miles from New York, and variations are made for differences in grade and in butter fat content. There are also variations due to differences in cost of transport, but these are more of the nature of deductions for marketing expenses, an aspect of the problem with which we are not dealing in this article. No distinction is made, under this system, between market milk and surplus milk and dairy farmers near to New York are inclined to feel that they are really subsidising the distant farmers to keep their milk out of New York.

A system adopted by the Chicago Milk Producers' Cooperative Company was devised in order to give a premium to the dairy farmers near the city who could always find a market for their milk as fresh milk. Producers are divided into four groups according as their milk is sold as fresh milk, or made into condensed milk, into butter or into cheese. The receipts for the milk supplied by each group are averaged. Each producer is paid the lowest of the four average prices plus two-thirds of the difference between the average price obtained for the milk supplied by his group and the lowest average price. The remaining third is distributed amongst all the suppliers in proportion to the quantities delivered.

EGGS. — The practice of co-operative egg-marketing associations illustrates the methods of meeting the difficulty which arises when produce, instead of being sold within the period over which the average price is taken, either remains unsold or is stored for sale during the season of minimum production. The two cases must be considered separately.

The suppliers of eggs are usually paid on the basis of the average price obtained during a week for eggs of similar grade. If eggs remain unsold at the end of any week they are deemed to have been sold at the market price, as determined by the association, and a sum equal to their value at that price is added to the total receipts for the week. The eggs are then sold in the following week and the difference between the price obtained and the price deemed to have been paid is added to the receipts of the second week. This system can obviously be carried on from week to week without undue complication.

When some of the eggs delivered in any week are retained in order to be stored, they are similarly deemed to have been sold at the market price. When, however, the stored eggs are actually sold, any net gains from the sale are divided proportionately, on the basis of the value of the respective deliveries, amongst the producers who delivered eggs in any week in which eggs were retained to be stored.

This is the practice of the Poultry Producers of Central California. The practice of the Poultry Producers of Southern California is slightly simpler. All eggs remaining over at the end of a week, whether merely unsold or put into storage, are treated alike, the net proceeds of the sales of such eggs during the whole year being distributed amongst the producers who delivered eggs in any week in which eggs were left unsold or retained to be stored.

Another method is to withdraw from the eggs delivered in each week a certain percentage and to store them. The members are then paid weekly for the eggs they have delivered less the percentage withdrawn. The receipts from the sale during the whole year of the eggs stored are then divided amongst the producers in proportion of the eggs delivered.

In conclusion, we would again draw attention to the fact that from the prices for produce calculated as above described, there are always deductions to be made for marketing and other expenses. The pro-rating of expenses is another of the many problems of co-operative marketing.

J. K. M.

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LAND SYSTEMS

Irrigation and Settlement of Irrigated Land in the Union of South Africa. (Continued).

Land settlement in the Union, whether on dry, or irrigable areas, is controlled by the Minister of Lands. In terms of the various Acts (1) referring to land settlement the Minister of Lands may allot Crown Lands, or purchase from funds voted by Parliament for the purpose, privately owned land for allotment to approved settlers. Thus although there is little irrigable Crown Land for allotment, the Government may, as will be later explained, purchase (irrigable) land for allotment.

As regards the allotment of dry lands, Land Boards constituted by law advise the Minister, but the Irrigation Commission Act of 1926 (2) makes provision for the replacement of Land Boards by the Commission in regard to allotment of irrigable lands.

Crown Lands are allotted in the form of a combined lease and option-to-purchase at a price arranged at the time of allotment. The period of the lease is five years. During the first year no rent is charged. The rent for each of the second and third years is 2 per cent. and for each of the fourth and fifth years, 3 ½ per cent., computed on the fixed purchase price. The lease may be extended for a further period of five years, the annual rent being 4 per cent. of the fixed purchase price. When, or if, the option to purchase is exercised, the purchase price becomes payable, and is paid in equal half yearly instalments extending over 40 years, interest being calculated at 4 per cent. (The usual interest charge on mortgages on farm property in the Union varies from 5 to 8 per cent.). It is a condition that the settler reside on the allotment although, under special circumstances, the Minister may grant exemption. Instead of entering into a lease-cum-option agreement, such as that just described, the Minister may accept one-tenth of the purchase price, leaving the remainder to be paid in regular instalments, the last being payable within 40 years of the allotment. As long as the land is under lease, the settler

(1) See Acts 12 of 1912, 23 of 1927, 28 of 1920, 21 of 1922, 26 of 1925.

(2) See Act 33 of 1926.

does not as a rule obtain transfer of the land, but provision is made for the issue of Crown Grant under certain conditions and after the expiration of at least five years from the commencement of a lease. The settler may not, for a period of ten years from the exercising of the option to buy, unless he has previously obtained Government sanction, mortgage or transfer the whole or any portion of the land.

Settlers desirous of acquiring specific portions of privately owned land for their personal occupation may be financially assisted by the Government. The prospective settler obtains from the owner an option to purchase the particular piece of land at a price mutually agreed upon by them and forwards it to the authorities with such further information as is laid down in the Act. The land is then inspected on behalf of the Minister and if it is considered that land and price and settler are satisfactory, the latter is called upon to pay a proportion of the purchase price not being less than one-tenth. The remainder of the purchase price is paid by the State, and the land is transferred to the Government. In no case however will the State advance more than £1,500 of the purchase price. The land is then allotted to the settler on a forty year lease with the option to purchase. This purchase price is definitely fixed at an amount equal to the sum advanced by the State, together with the cost of inspection and the cost of transfer. Repayment to the Government is made by the settler in 76 equal half yearly instalments commencing at the beginning of the third year, interest being computed at the rate of 4 per cent. per annum.

Crown land is cut up into farms or holdings before allotment. No limit, however, is placed on the size of farms or holdings purchased by settlers from private owners with Government assistance. Dry land farms vary in price from perhaps eighteen pence per acre to seven or eight pounds depending upon the locality of the land. In the more arid parts, where the unit price is low, a very large farm is needed to support a family, and farms of twenty thousand acres are common in other parts, where the rainfall is higher, dry land farms may be said to vary from four hundred to a thousand acres in extent. By limiting the financial assistance given to a prospective purchaser to £1,500, a limit to the size of the farm purchased is virtually imposed which automatically alters from district to district. The market value of irrigated land varies a great deal. The water-rate payable on the land, the nature of the water supply, the quality of the land, and the crops which may be grown all affect the price of the land. Under some irrigation schemes a bid of £2 10s. per acre for land cannot be obtained at a public sale by auction; under other schemes prices of £100 and even £250 per acre are asked and paid.

The State insists upon settlers having a capital of a few hundred pounds. This is particularly necessary in the case of settlers on irrigable land. Preparation of land for irrigation is frequently costly. Clearing, stubbing, ploughing, levelling and putting down to lucerne may cost £25 per acre. Orchards, when one takes into account the long period of waiting, and the loss of income from the land during those years, cost even more to establish than lucerne.

On allotted land the Government may make permanent improvements, adding the cost thereof to the purchase price of the land, or may make advances not exceeding £500 to settlers for this purpose, or for the purpose of purchasing stock, equipment, etc., necessary for the proper and speedy development of their holdings.

There has been during recent years, no large influx of overseas settlers, nor any attempt at group settlement. A few private land companies have tried to undertake the development of land under irrigation with the view to selling the land to settlers; but these attempts have met with but scanty success.

Under many Board schemes the area held by the original owners is far in ex-

cess of what they can hope to work. There are numerous men holding from 1,000 to 2,000 acres, where 60 is perhaps all they can develop. These men have always been too optimistic. When they valued their land at £100 per acre, no one was prepared to pay £75. When the market price had dropped to £15 they wanted £25, and now they have difficulty in disposing of the land at £25 per acre. These big owners with their desire to obtain more than market value for their land have clogged the settlement machinery. More than one Government Commission (1) enquiring into the financial conditions of "Board Schemes" has recommended to the Government the purchase by the State of surplus irrigable land under the Board schemes, and the allotting of such land to settlers. These Commissions also recommended that the allotments be made under more favourable terms than the terms of allotment of dry farms. Unless the land to be allotted be cleared, levelled, and bedded before allotment, it was agreed by these Commissions that the year or two granted free of rent, though sufficient for settlers taking up stock farming or even dry land farming, was insufficient for irrigators. The preliminary work on an irrigation farm is so much heavier and the period of waiting for a return on the higher class of crop the planting of which is necessitated by a heavy water rate is so much longer than the preliminary work and period of waiting on a dryland farm, that greater facilities should be granted to the irrigator than to other settlers.

Experience in many parts of the world has proved that since irrigation is one of the very highest branches of farming, only the best men should be placed on irrigated land. As an American specialist has expressed it, the settlers should be "handpicked". The most successful settlement scheme, and one of the most successful irrigation schemes in the Union, is the Labour Colony at Kakamas, on the Orange River. This scheme is owned and controlled by the Dutch Reformed Church. The settlers here all belonged to the unfortunate class known as "poor whites", recruited in parishes all over the country. All had, however, to pass through a severe test and all were under observation for many months before they were allotted land by the Church. Preference was given to men who had worked on the construction of the canals. Here a man worked under great physical hardships to obtain a 10 or 12 acre leasehold allotment, only to find when his work on the canal was completed that he had, practically singlehanded, to carve out fields from a collection of sandy hummocks perhaps ten feet high covered with thorn trees and undergrowth which forbade entry except on hands and knees. The men who won through these obstacles were proved to be not the hopeless unemployable but the unfortunate unemployed. The fertile soil of the Orange River has enabled these men, who had in a way been automatically selected, to make good.

Many settlers on irrigation schemes in the Union who have been selected in a more or less haphazard manner have been failures. Selection is an extremely difficult matter. South Africa is a large country; even its two capitals, Cape Town and Pretoria, lie more than a thousand miles apart. When a farm is advertised by the Government for allotment many hundreds of applications from all parts of the Union are received, and it is, therefore, not practicable to bring all applicants to one centre for personal inspection and examination. As a result, allotment has to be made according to reports and testimonials from individuals whose motive is not always the forwarding of a settlement policy of the Government.

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(1) See First, Second and Third Reports of the Irrigation Finance Commission Union of South Africa, 1924, 1925, and 1926 and First Report of the Special Irrigation Commission Union of South Africa, 1926.

In order to permit of some selection the principle of leasing land to probationary lessees has recently been adopted (1).

The object of the law passed in 1924 is to facilitate settlement of irrigation areas. It gives to the Minister the power to grant the right of temporary occupation of Crown Land, for a period not exceeding three years, to any person who is regarded by him as likely to be suitable, when trained, to become a lessee of a holding under the principal Land Settlement Act. The right of temporary occupation is granted on such terms and conditions as the Minister may determine. Under this Act the Minister further obtained the right, out of monies appropriated by Parliament for the purpose, to clear, level, plough, and plant, Crown Land, intended for occupation by probationary lessees; to make roads to serve such land, and carry out any other improvements thereon, which he may deem necessary for the agricultural training and suitable accommodation of probationary lessees in the occupation, development and working of holdings, by them; to purchase and maintain stock, implements, equipment and seeds, etc., for the same purpose; to pay maintenance allowances to probationary lessees; to erect and equip buildings which he may deem necessary for storage, handling, grading, manufacturing, etc., of produce grown by probationary and other lessees.

Under this Act two probationary settlement schemes have been inaugurated, one at the area served by the Hartebeestpoort Dam, in the Transvaal, and one under the Olifants River (van Rhyndsdorp) Scheme in the Cape Province. According to the regulations issued by the Government probationary lessees are obliged to comply with all instructions issued by the Controller of the settlements in respect of the following matters:—

(a) the particular kind of crops or trees to be grown on the holding (no crops or trees except those approved by the authorities may be grown);

(b) the manner of working a holding and the planting, cultivation, irrigation, and reaping of crops, and the planting, pruning, spraying and irrigation of trees;

(c) the co-operative work of the holding;

(d) the use, care and maintenance of any animals or equipment in the lessee's charge;

(e) the use, care and maintenance of permanent improvements, including the rendering of personal labour, without payment, in connection with the repair and maintenance of any permanent improvements, water furrows and roads on any of the holdings of the probationary lessees or elsewhere within the settlement area;

(f) the eradication of noxious and other weeds;

(g) the extermination of vermin including rodents;

(h) and generally in regard to all matters considered necessary to ensure the proper training of probationary lessees, proper conditions of sanitation, prevention of nuisances, and the general health and welfare of the probationary lessees.

A maintenance allowance not exceeding the following scale may, in the discretion of the Minister be granted to probationary lessees:—

(a) for the first nine months of the period of probation 60s. per month for a married man, whose wife is resident with him, and 12s. 6d. per month for each resident child, with a maximum of £6 per month. For a single man £2 5s. per month.

(b) for the six months following, one half of the above rates.

This maintenance allowance is payable from the date on which the probation-

(1) See Act 38 of 1924.

any lessee takes occupation of his holding. On the expiration of a period of fifteen months from the date on which he took occupation, or in the event of earlier termination or surrender of the right of occupation, payment of the allowance ceases.

All crops (except those raised by the probationer in his own vegetable garden) raised from any holding in respect of which a right of temporary occupation has been granted, is the property of the Government, who makes provision for the sale or disposal thereof; from the proceeds derived from the sale or disposal, there is deducted the expenses of marketing, transport or railage; of the balance of the proceeds remaining, a share equal to 40 per cent is retained by the Government on account of its expenditure on the probationary settlement area. The remaining 60 per cent. of the net proceeds is paid to the probationary lessee.

At the termination of the period of probation the lessee is eligible as a settler and if found suitable is granted an allotment—usually the one which he has been occupying during his probationary period. In the Hartebeestpoort area the allotment is 20 acres in extent. This system has only been tested for a short period, but so far appears to be operating successfully.

South Africa, where the White Man is surrounded by an overwhelming majority of inferior races, presents special problems with regard to poverty, unemployment, etc. When white men sink to the level of unskilled labourers in South Africa, they lose caste. Only those who have lived among the coloured races can realise how difficult it is to rehabilitate the fallen whites. The Labour Department is attempting to reclaim men of this stamp by placing them on irrigated land under a system which permits of selection. Under the dam at Hartebeestpoort a communal farm has been started. On this farm there are, today, several hundred families. The men are employed as day-labourers, the best of them are picked out from time to time and given six acre plots under irrigation to cultivate. Such individuals receive a daily wage and their crops are marketed by the Department. If the profit on the sales is sufficient, the worker is credited with the difference between what he has received in daily wages and the proceeds of the sales. If, on the other hand, the crops do not realise the amount of the daily wage, no refund is made by him. When a worker has proved himself capable of farming on his own, he is recommended to the Department of Lands and may be granted an allotment on a Land Settlement lease, such as above described. This experiment has been in working for about two years.

South Africa, like all other countries that have practised irrigation, has made its mistakes. Schemes, promoted on an ostrich feather basis, have had to produce poultry, potatoes and pigs; schemes, the cost of construction of which was estimated prior to 1915, were constructed during the Great War, when the cost of materials and labour was at its height; farmers who were most persistent in their importunities, clamouring for water for their fertile acres, woke up to find the soil on large areas of their farms only a few inches deep; rivers on whose flow schemes are dependent have since the completion of the works been subjected to years of drought, of severity unknown to the oldest inhabitant; by schemes promoted for speculation, overseas settlers have been drawn to South Africa only to find that they had been deceived by the too glowing accounts given by the promoters.

Behind most of these schemes, good, bad or indifferent, stands the Government of the Union of South Africa as money-lender. According to the terms of the loans granted to the builders of these schemes the first instalment on the loans becomes payable two years after the date of completion of the scheme. Had the provision been stringently applied, most of the original holders of land under the

schemes would have been ruined. Successive Governments have, however, exhibited the greatest possible patience and leniency with regard to the collection of instalments. The two years grace in the repayment of instalments at first granted under the Act, were lengthened by an amendment to six, the six later to eight, and now a total deferment period of eleven years at the discretion of the Minister has been approved by Parliament (1). The policy of the Government in the past has been largely paternal and there is no reason to doubt that this policy will continue. Some of the schemes, however, need readjustment, and the formulating of plans of readjustment which will place all these schemes on a sound footing is one of the duties of the recently appointed Commission. It will be seen that theoretically the policy of construction of irrigation works in South Africa lies between that of certain European countries where the State advances up to a half of the cost of irrigation works as a loan to be repaid with interest, and that of the United States of America where the whole of the cost is paid by the State and the capital only, without interest, is to be repaid by the irrigators. Actually, however, the State in South Africa will do more than it set out to do. It stands on the point of writing off many hundreds of thousands of pounds from the cost of such irrigation works as are over-capitalised. A movement was set on foot some time ago to induce the State to adopt the principle of constructing new works and handing them over free of charge to the irrigators, and writing off the entire capital cost of all existing works built with the aid of State funds. There is no indication at present, however, of this suggestion being seriously entertained by any responsible body.

Although the area which can eventually be irrigated in South Africa is limited, no limit has as yet been placed upon the production per unit area. South Africa, can produce fruit at a time when the trees of the Northern Hemisphere are dormant and of all its competitors in the Southern Hemisphere, it is the nearest to the European market. Ripe grapes, peaches, pears, oranges, grape-fruit, grown in the Union can command the highest prices in the World's markets. Raisins, whether sultanas or other varieties, dried peaches and apricots of excellent quality and in large quantities are produced, and may be produced in much larger quantities. Tobacco, milk, cheese, butter, honey, mutton, beef, wool, and vegetables, are all produced on irrigated farms in South Africa.

Railways have been constructed to all the larger irrigation centres and in many instances the railway runs along the banks of the rivers in the irrigated valleys, bringing the irrigator within a few miles of a station; specially designed refrigerator trucks are provided by the railway administration for the conveyance of perishable products. Private companies have erected factories to prepare and handle the dried fruit, and farmers with the aid of Government, have constructed co-operative dehydrating plants. Similarly private and co-operative cold storage plants, creameries and cheese factories have been established. Egg circles are organised in various parts which provide a ready market for poultry produce. A strong and extensive Tobacco Growers' Co-operation is in existence which protects the interests of its members.

Co-operation among farmers has been greatly encouraged by the State during recent years. To irrigators co-operation in connection with fruit is of particular interest as the sale of a large bulk of such a perishable product within a few weeks can only be effected satisfactorily if efficient organisation has been provided. Fruit producers have local co-operative societies which are affiliated under one or other

(1) See Acts 38 of 1922, 43 of 1925 and 27 of 1927.

of the two separate fruit exchanges — the Citrus Fruit Exchange, and the Deciduous Fruit Exchange. Each Exchange controls its own Co-operative Societies, but both are themselves affiliated in the "Fruit Growers' Co-operative Exchange" which deals with matters common to both, and works in conjunction with the Perishable Products Export Control Board, recently established (1). This Board consisting of three members is a corporate body. It is empowered to enter into contracts with shipowners or other persons for the conveyance or storage of perishable products, Its functions and duties are to control the export of perishable products from the Union and the order of shipment thereof at all ports; to determine the ships by which and the class of accommodation to which any perishable product shall be conveyed and assigned; to call for estimates of intending exports; to call for information regarding shipping space available; to negotiate or contract for the provision of available shipping space; to cause to be diverted products from one port to another; to investigate and make recommendations regarding refrigerator rolling-stock and cold storage requirements; to make recommendations regarding the handling of perishable products, and to perform all such functions in respect of export and shipment of perishable products and the pre-cooling thereof. Committees, not exceeding three persons, are appointed at various ports to assist the Board. No person may export perishable products from the Union except under consent of or by arrangement made by, with or through, the Board. The contracts entered into by the Board may be guaranteed by the Minister of Agriculture. The Minister of Agriculture has power to levy a special rate on the tonnage exported of each class of product for the purpose of defraying the expenses of the Board. Cold storage accommodation of the best design has been constructed by the Department of Railways and Harbours for the handling of perishables at the Union harbours.

This active participation by the State in improving, controlling and facilitating the marketing of produce is of very recent date. With this goal in view, it has during the last twenty-five years imported a great variety of agricultural experts from overseas; it has granted scores of bursaries to selected youths of the land to proceed to overseas universities for the purpose of studying agriculture, employing them on their return to South Africa as experts to advise farmers. The State also published monthly journals and innumerable pamphlets on agricultural matters, establishes demonstration farms at suitable places, and on the Government irrigation works places resident agricultural experts who are at the service of the irrigators.

When the less successful irrigation schemes have been readjusted so that (1) the area to be served by the works is in as near a reasonable proportion to the water available as is possible in this land of variable supply, and (2) the water rates, where necessary, have been reduced to a fair figure, farming under irrigation in South Africa will provide a good living amidst excellent surroundings.

R. J. VAN REENEN.

FARM ECONOMICS

Book-keeping Results in Danish Agriculture in 1928-29.

For the financial year 1928-29 the Danish Bureau of Farm Management and Agricultural Economics (*Det landøkonomiske Driftsbureau*) expects to receive about 750 farm accounts. Among the earlier returns made, accounts from 200 farms, which reported also for the year 1927-28, have already been statistically elaborated

(1) See Act 53 of 1926.

to a certain degree and the results published as a preliminary survey in the reports of the Bureau. Since the grouping of these farms as to area and situation is in a definite relation to that of the total number of accounts, it may be assumed that the results will also be representative for the total number of farms rendering account to the Bureau.

The 200 farms included in the preliminary survey were made up of 37 farms of less than 10 hectares cultivated area (average size 6.1 hectares), 123 of from 10 to 50 hectares (average size 27.9 hectares), and 40 of over 50 hectares (average size 114.1 hectares).

Agricultural Capital. — As seen from Table I, which gives details as regards the agricultural capital of the 200 farms in 1928-29 and in 1927-28, the capital represented by land and buildings and the working capital were practically the same in both years. In 1928-29 the former amounted to 2,481 Kroner per hectare, the latter to 603 Kroner, both figures being only about 1 per cent. less than the corresponding figures for 1927-28. As regards the absolute level of the figures in the table, it must be borne in mind that they represent estimated values and that the valuation is rather low, land and buildings being entered at the value at which they are assessed for purposes of taxation. Estimated at sale value the agricultural capital would be about 20 % higher.

TABLE I. — *Agricultural Capital in Kroner per Hectare.*

Area of farms (hectares)	Land and buildings	Working Capital				Total agricultural capital	
		Live- stock	Implements, machines	Supplies	Total	1927-28	1928-29
Less than 10	2,292	529	288	21	838	3,130	3,212
10-50	1,823	373	177	25	575	2,398	2,403
50 or more	1,691	293	125	35	443	2,134	2,146
All 200 farms in 1928-29	1,884	384	187	26	597	2,481	—
All 200 farms in 1927-28	1,901	386	190	27	603	—	2,504

Gross returns. — Owing to the particularly good crop returns in 1928, to the increase in the prices of butter and bacon and to the increase in bacon production during the second half of the financial year, the average gross return rose by 74 kroner per hectare (10 %) or from 769 Kroner in 1927-28 to 843 in 1928-29. The rise in the returns is mainly due to the pig production, the value of which increased by 50 Kroner per hectare and to a less degree to the greater income from cattle and crops. The gross returns for "other animals" (chiefly poultry) and "sundries" have slightly declined. Among the different size-groups the small holdings show the least rise in their gross returns owing to the fact that no increase of their pig production has taken place.

TABLE II. — *Gross Returns in Kroner per Hectare.*

Area of farms (hectares)	Products from					Total 1928-29	Total 1927-28
	Crops	Cattle	Pigs	Other animals	Sundries		
Less than 10	49	534	485	105	60	1,233	1,189
10-50	68	365	301	33	28	795	718
50 or more	157	262	180	12	19	630	554
All 200 farms in 1928-29	82	376	310	43	32	843	—
All 200 farms in 1927-28	67	364	280	45	33	—	769

Working expenses. — In spite of the not inconsiderable increase of the gross return, the working expenses have, as will be seen from Table III, declined by 36 Kroner per hectare (5 %), or from 724 Kroner in 1927-28 to 688 in 1928-29. The decline occurs in all the different groups of expenses given in the table, but the largest percentage decrease has been in concentrates (7.5 %) and labour (5.1 %). The reduction has been most marked on the small holdings which seems to indicate a somewhat better labour economy on these farms than had previously been attained.

TABLE III. — *Working Costs in Kroner per Hectare.*

Area of farms (hectares)	Labour	Con- centrates	Artificial manures	Other purchases	Other costs	Total 1928-29	Total 1927-28
Less than 10.	377	378	32	100	138	1,025	1,142
10-50	246	189	27	68	122	247	685
50 or more	197	121	31	41	100	499	519
All 200 farms in 1928-29	280	211	29	66	122	688	—
All 200 farms in 1927-28	274	228	30	68	124	—	764

Net Returns. — The increase of the gross return at the same time as the fall in the working expenses has resulted in a considerable improvement of the net return in 1928-29 as compared with 1927-28. On an average it rose as will be seen from Table IV, for all holdings from 45 Kroner per hectare to 155 Kroner per hectare in 1928-29. Expressed as a percentage of the value of the agricultural capital the net return rose from 1.8 % in 1927-28 to 6.2 % in 1928-29. Small holdings showed the best results, but the difference between the different size groups has not been very great, the net return being for farms of 50 hectares or more, 6.1 %; for farms 10-50 hectares, 6.2 %; and for the small holdings 6.6 %. As already pointed out, the market value is somewhat higher than the estimated value of the agricultural capital and calculated in per cent. of the former the average net return for all holdings in 1928-29 would be reduced to 5.1 % as compared with 1.5 % in 1927-28.

TABLE IV. — *Summary of Financial Results.*

Area of farms (hectares)	Kroner per hectare			Net returns 1928-29		Net returns in 1927-28	
	Agricul- tural capital	Gross returns	Working expenses	Kroner per hectare	in % of agricul- tural capital	Kroner per hectare	in % agricul- tural capital
Less than 10.	3,180	1,233	1,025	208	6.6	47	1.5
10-50	2,398	795	647	148	6.2	48	2.0
50 or more	2,134	630	499	131	6.1	35	1.6
All 200 farms in 1928-29	2,481	843	689	155	6.2	—	—
All 200 farms in 1927-28	2,504	769	724	—	—	45	1.8

The actual remuneration for labour performed on the farm by the owner and his family, which is arrived at by deducting from the gross return all other working expenses as well as 5 % interest on the estimated capital, was, as will be seen from Table V, very low in 1927-28 but rose considerably in 1928-29. The actual earnings of the family were for the small holdings 17 % and for the other two groups respectively 24 and 46 % above the total of the remuneration as calculated (according to the usual rate of wages) + management wage. If, however, the remuneration for the labour of the family is estimated after deducting from the gross return other working expenses and 5 % interest, not on the estimated but on the

market value of the farm, it will not for the small holdings and the medium-sized farms amount to much more than the normal wage calculated as mentioned above. For the farms of 50 hectares and more, on the other hand, for which the difference between the estimated and the market value is much less, the actual remuneration would surpass that calculated by about 20 %.

TABLE V. — *Actual Labour Earnings of the Family.*

Area of farms (hectares)	1928-29		1927-28		In % of the earnings as calculated + management wage	
	Kroner per hectare	Kroner per farm	Kroner per hectare	Kroner per farm	1928-29	1927-28
Less than 10	351	2,141	221	1,348	117.0	66.0
10-50	144	4,018	46	1,283	124.1	39.0
50 or more	76	8,672	18	2,054	146.0	33.8

H. L.

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Foreløbig Oversigt over Landbrugets Driftsresultat i Regnskabsaaret 1928-29. Meddelelse fra Landøkonomisk Driftsbureau (*Preliminary Survey of Agricultural Book-keeping results in the financial year 1928-29. Communication of the Bureau of Farm Management and Agricultural Economics*) Ugeskrift for Landmaend, No. 41, Copenhagen, 1929.

ECONOMIC AND SOCIAL CONDITIONS OF THE AGRICULTURAL CLASSES

Some Notes on the Problem of Rural Betterment in India.

In the Report of the Royal Commission on Agriculture in India (1), the chapter on the Village is of particular importance as a study of social conditions. The general terms of reference of the Commission were: "to examine and report on the present conditions of agriculture and rural economy in British India, and to make recommendations for the improvement of agriculture and the promotion of the welfare and prosperity of the rural population", and a study of the Report and of the evidence taken shows that the attention given to the technical aspects of agriculture and its improvement has not been allowed to obscure the question of the actual needs and welfare of the rural population. In other words, it has throughout been recognised that, side by side with the "better farming" of the soil of India, there should be brought about the "better living" of the Indian cultivator.

In spite of the considerable regional diversity of the sub-continent of India, there is a striking uniformity in its rural economy. Taking the population of all India, *i. e.*, British India and the Indian States, together at 333,000,000 (or nearly three times that of the United States of America) the proportion directly dependent on agriculture was estimated at the census of 1921 at 73.9 per cent. These rural

(1) The Commission was in session from October 1926 to December 1927, the two cold weather seasons being devoted to enquiries throughout India, in connection with which the Commissioners travelled more than 18,000 miles. From May to August 1927 the evidence of a number of experts and of representatives of trading interests was taken in London. The Report appeared in June 1928.

millions for the most part live in primitive village communities, not yet approached by metalled road or railway, and cultivate small holdings, often of less than five acres, distributed over the fields that surround the village. The villages, of which there are about half a million in British India alone, vary from mere groups of a few mud huts to close-packed communities of 5,000 persons. In the village are also found the artisans required by its simple and self-sufficing life, the smith, the carpenter, the weaver, the potter and the worker in leather. In some cases these callings are combined with some work in connection with cultivation. The village has always been largely self-governing, and it has been the object of recent Government enactments rather to increase the efficiency of village local administration than substitute provincial administration. The *panchayats* or village committees, are now a very real feature of Indian rural life.

As is well remarked in the Report (p. 479) :

“ The typical cultivator is, within the sphere of his experience, self-reliant, and both his method of cultivation and his social organisation exhibit that settled order which is characteristic of all countries in which the cultivating peasant has long lived in, and closely adapted himself to, the conditions of a particular environment ”. On the other hand there is abundant proof, to be found both within the pages of the Report and elsewhere, that the traditional methods of cultivation in India, although often better adapted to conditions than the would-be reformer has imagined, on the whole do not utilise the full energies of the worker nor the potential fertility of the soil. Such a system must be uneconomic and result in the poverty and depressed conditions of the rural population. The attempts, however, to remedy the backwardness of agriculture have revealed the existence of a vicious circle. By the experimental and demonstration work carried out within the last twenty years it has been amply proved that considerable development can take place in the traditional Indian agriculture, and that in this way improvement could be effected in the position and resources of the cultivators. But at the same time it has become equally clear that the main obstacle to the practical application of science to the cultivators' own holdings lies in certain universal features of Indian village life, which it is proposed here to examine.

In enumerating these features or factors, *viz.*, insanitary conditions with their effects on public health, illiteracy, indebtedness, and lastly adherence to certain wasteful and unproductive social customs, it will be noted that these are largely interrelated and must inevitably react upon each other. Each may however be considered separately, with some brief account of the measures now being taken to counteract their effects, whether separate or cumulative, on agriculture and on human well-being.

Insanitary conditions and public health. — There must always be a close relationship between agriculture and public health, and only a vigorous breed of cultivators can really win the best from any soil. In the typical Indian village however, where the unventilated houses are “ crowded and huddled round a maze of narrow and fetid lanes, swarming with ownerless dogs and myriads of flies ”, and there is a practically unchecked pollution of the water supply, it is scarcely surprising that the mortality, ordinary and infantile (25 and 174 per 1000 respectively) is much in excess of that of any European country or of the United States, and that, while a high standard of personal cleanliness and dignity is maintained, the general physical condition is weak, and the capacity for work lowered. According to an estimate made by the All India Conference of Medical Research Workers in 1926, “ the average number of deaths resulting each year from preventable diseases is about five to six millions, the average number of days lost to labour

by each person in India from preventible disease is not less than 14 to 21 days per year, and the percentage loss of efficiency is not less than 20 per cent ”.

There is at present a distinct forward movement in the investigation of public health problems. It has to be borne in mind that the principles of hygiene which are now so familiar in Western countries cannot, to quote the Report “ be forced upon a people bound by ancient customs many of which are linked up with the religious practices (1). The policy has been rather to press on with research and investigation, and by judicious and well considered propaganda, to try to foster in the people a public health conscience ”.

In the vast rural areas the success of this policy must depend on an expansion of the provincial public health services. The most highly developed of these departments, that of Madras, has been at work since 1923. There are 26 district health officers and a staff of inspectors under each. The staff of each district deals with the investigation and control of communicable diseases in rural areas, supervision of preventive measures and registration of vital statistics. In addition it drafts plans and estimates for simple sanitary projects, endeavours to suppress the breeding places of mosquitos (malaria is one of the greatest scourges of India), and to secure the protection of wells and other sources of the water supply. The district health staff is also responsible for health propaganda work. The other provinces are following suit, and, apart from official action, mention may be made of an interesting co-operative experiment, the Bengal Co-operative Anti-Malaria Societies of which there are now 1,000, engaged in draining swamps, sinking tube wells, and treating cases of malaria. As regards the all important work of maternity and infant welfare, vigorous unofficial movements are now in progress but by force of circumstances are mainly confined to the towns. A scheme for instruction of village *dais* (midwives) in groups at town centres has met with success in Bombay Presidency.

Illiteracy. — The available statistics in regard to literacy and primary education do not distinguish clearly between the rural and the urban elements. The actual condition of literacy among the rural population is certainly worse than the averages suggest. According to the 1921 census, only 18.3 of the male population over 20 years of age could pass a test of ability to read and write a simple letter in the vernacular, as against 16.1 in 1911. The percentage of scholars attending primary schools of any kind (*i. e.* recognised and unrecognised institutions) of the population of school-going age, *viz.*, 15 per cent. of the total population, was for boys 32.2 and for girls 7.6 in British India (2). It is generally admitted that the need for supplying facilities for primary education has not been sufficiently recognised in the past, but in this respect a marked advance has been made in recent years. The provision of primary schools, *viz.*, a total of 218,000 of which 157,000 are boys' schools, is however still much below the needs of over 500,000 towns and villages. Apart from any lack of facilities, failure to achieve more rapid progress in the spread of male literacy is largely due to the shortness of the period for which most boys remain at a primary school. Less than 20 per cent. of those who attend take the whole four years' course, while between 20 and 25 per cent. leave after a year, or in the second year. A large proportion never rise above the lowest class. Hence by wastage and retardation the value of the education pro-

(1) Indian life cannot be understood with even moderate justice, unless its constant background of religious feeling is realised.

(2) All above returns refer to British India only, education being comparatively backward in the Indian States.

vided is largely nullified. As regards rural education it is certain that the rural schools do not as a rule attract the ablest teachers, and to quote the Report, "the villager may be illiterate, but he is usually shrewd enough to appraise the value or lack of value of the tuition given in relation to the life he knows".

There is now, as it has been expressed, "a cautious advance" towards compulsion in respect of primary education, and every province except Burma (which is Buddhist and largely literate) has now a Primary Education Act, under which compulsion can be applied in selected areas, the consent of the residents being usually obtained beforehand. The 500 rural areas concerned are almost all in the Punjab, which is also distinguished by the formation of co-operative societies for compulsory education of juveniles. In the Punjab too where the military peasantry include a number of returned ex-service men from the European war there has been a marked adult school movement, while in Madras, Bengal and Bihar adult instruction is provided in a number of the juvenile schools.

As regards higher education in India, existing facilities are very considerable, but their benefits do not extend in any appreciable degree to the rural population.

Indebtedness. — It may be said that the normal condition of the Indian cultivator is one of indebtedness. If this indebtedness were productive, *i. e.*, if the debts had been incurred for agricultural or land improvements, it would in itself be no great evil. But the debts which press on the Indian peasant are unproductive, liable to regular increase at compound interest, and are passed down from father to son. The state of things originated when on the institution of British rule, the ownership of the soil became vested in the cultivator instead of, as before, in the rulers themselves. The money-lending classes formerly confined to the towns, seeing their opportunity, spread over the rural areas, and took advantage of the recurring necessities of the peasant in times of famine by giving him food and seed grain in exchange for bonds, usually much beyond his comprehension, on his land and produce. The transference of actual land has since been restricted by a series of laws (1879-1916) which prohibit alienation of land except to another cultivator, but the peasant can and does still borrow on his cattle, crops and family jewellery, the possession which the Oriental will surrender last of all. The illiteracy of the cultivator strengthens the hold that his literate creditor has upon him, and in this way he sinks into a hopeless position of insolvency, his produce passing regularly to his creditor, in exchange for a pittance. So normal indeed is this position, that it is only by special teaching and organisation that he can be made to understand that any other condition is possible. It is obvious that neither agricultural nor any progress will be achieved in these circumstances.

The remedy originally devised as soon as the extent of the evil became fully apparent was that of State loans, instituted in 1883, but the complexities that inevitably surround borrowing from an official source made the scheme unworkable under Indian conditions, and the true remedy was early in this century realised to be the rural co-operative credit society on the Raiffeisen model. There are now several types of agricultural co-operative societies but the rural credit societies usually with unlimited liability remain by far the most numerous and in a sense the most important. Details of their working in various provinces have been frequently given in the pages of this Review (1) and it is chiefly intended here to

(1) In particular see CALVERT H. Agricultural Co-operation in India. *International Review of Agricultural Economics* January-March 1924. The total number of agricultural co-operative societies in British India in 1926-27 was 67,187, of which 65,058 were credit societies. In addition there were 8,287 rural credit societies in the principal Indian States.

stress their self-governing character which has been carefully maintained although their introduction was due to Government action and in no way to popular demand. The staff of the official Registrar of the Province guide and advise but have no legal powers of intervention. Each individual society is managed by its own elected committee of villagers, and the co-operative union of each area pays a number of non-official supervisors who tour the villages and in view of the prevailing illiteracy are charged, *inter alia*, with keeping the accounts of the societies, the transactions being meanwhile memorised by the committees. Members are pledged not to resort to the moneylender and advances are made on personal surety and as far as possible for productive purposes only but since the custom of spending on ceremonial occasions is too strong to be disregarded, moderate sums are also advanced for expenditure of this nature. Although the progress of these societies has been remarkable in the course of the last twenty years, even in those major provinces where the movement is strongest (Punjab, Madras, Bombay), the percentage of members to each hundred families does not exceed ten and it has been estimated in the Punjab that about 15 per cent. of the loans taken by cultivators for agricultural purposes are borrowed from the societies; for the rest the usurer is still approached. In the same province the rural debt was estimated in 1924 at £280,000,000 and over £5,000,000 is being annually repaid to usurers through the societies. It will thus be seen that there is still a long road to travel.

Adherence to Custom. — More especially in the Eastern Punjab and in the Bombay Deccan, as well as elsewhere in India, a very serious bar to agricultural progress is created by the custom of *sub-division of holdings in inheritance*. By the operation of the law of succession each heir receives an equal share in each quality of land. The result is often a disastrous fragmentation of holdings, the plots belonging to one owner being frequently scattered over the whole area of the village fields. With such dispersion of holdings that are not even permanent units, the introduction of improved methods becomes virtually impossible, and even ordinary ploughing is often difficult to accomplish, while there is bound to be constant friction between neighbours on grounds of cattle trespass, use of well water, etc. The justification for the practice of sub-division is found in the rice growing regions, where each cultivator needs a tract of rain-inundated land for his rice, and a plot for mixed cultivation on the higher land where the village stands. But elsewhere it can only be injurious and a remedy has to be found. Under Indian conditions, it is considered that the only practicable remedy is consolidation of holdings with consent of the cultivators, and in the Punjab within the past ten years something has been accomplished by the formation and activity of co-operative societies for the voluntary re-distribution of holdings. Already the fields of 350 villages (out of the 33,000 existing in the Punjab) have been re-allotted by consent, as the result of time and energy spent in propaganda and in careful attention to the claims of every holder. Improvements formerly impossible are now in progress, wells are sunk in the new block holdings, new crops have been introduced and fruit trees planted. In several other provinces opinion is in favour of action on similar lines.

It is often stated that one of the chief causes of the indebtedness which paralyses the activity of the Indian peasant has been the persistence in the custom of *extravagant expenditure on ceremonial occasions*.

Efforts have been recently made in the Punjab province to curtail unnecessary expenditure of this kind by the Better Living Societies to which further reference will be made. The Registrar of Co-operative Societies reports for 1927 that the cost of a marriage in Montgomery villages, where better living is accepted, was

reduced from Rs. 2000 (about £133) to Rs. 300 (£20), and that in Jullundur 103 ceremonies cost Rs. 14,000 instead of Rs. 51,000, *i. e.*, on an average each ceremony cost Rs. 136 or about £9 instead of Rs. 495 or about £33. He adds that "Rs. 14,000 was bad enough!". His successor reports for 1928 that the members of seven societies in Montgomery district saved Rs. 16,000 on 32 marriages, *i. e.*, on an average the expenditure was less by Rs. 500 (or £33) than it would have been apart from the influence of the societies. The resources of the spenders can only be roughly estimated, but judging from figures available for Montgomery, a Canal Colony with a fairly high standard of rural prosperity (1), it would seem that the cultivators whether owners or tenants could scarcely count on much more than Rs. 1500 per annum from their holdings, *i. e.*, a return of not more than Rs. 30 per acre for a probable maximum of 50 acres.

Another group of customs directly affecting the progress of agriculture and with the welfare of the rural masses are those which relate to the *reverence of cattle*. As is well known, the cow is a sacred animal of the Hindus; consequently if the peasant is a Hindu (as are the majority of the rural population) he is barred by his religion from slaughtering a superfluous, inferior or worn out animal. If he is Mohammedan he can only slaughter in complete secrecy for fear of offending Hindu feeling, and in addition his social position is apt to be judged by the size of the herd he maintains. Apart from the effect of this attitude on the whole problem of improvement of cattle in India the results are often immediately disastrous for the cultivators, as the grasslands round the village are everywhere overstocked with inferior animals who, as the natural grazing of India is of real food value for a short period in the year only, seek the greater part of their food as they can, frequently by raiding the crops. What little fodder is conserved is fed to the work animals, since on them depend both cultivation and transport in rural India, or to the female buffalos which are looked upon as the dairy animal proper.

The task of livestock improvement in India under these conditions is one of immense magnitude. The Government cattle farms, mainly the Hissar farm in the Punjab and that at Madhuri in the United Provinces, undertake the mass production of first class bulls, but since 10,000 are annually required in the Punjab and the Hissar farm issued only 551 in 1926-27, it will be seen that the supply is still very far from adequate to the needs. A certain measure of success has been achieved in the Punjab by the formation of Co-operative Breeding Societies, but the Registrar reports for 1928 that the 174 societies with their 4,500 members exist for the most part rather on paper than in reality, and represent rather "associations of cultivators who feel the need for better cattle but are powerless to breed them". He adds that "religious scruples oppose an insuperable bar to the elimination of bad stock". Some success has however been achieved in regard to breeding control. A few societies have been formed in Bombay Presidency, and two societies exist in the small province of Ajmer-Merwara. So far this co-operative development does not extend to the other provinces.

The results on the whole achieved in the Punjab undoubtedly go far to show that the village co-operative society is an effective instrument in furthering that "uplift" which is so much to be desired for the rural life of India. Two types, mainly confined to this province, still call for mention, the Better Farming and the Better Living Societies.

Of Better Farming Societies there were in the Punjab 99 with a total of 2,400

(1) Farm Accountancy Enquiries in the Canal Colonies of the Punjab. *International Review of Agriculture*, November 1928.

members in 1927, and 118 with a total of 2,792 members in 1928. The members bind themselves to follow such methods and to use such machines and seeds as they themselves in general meeting may resolve to adopt on advice from the Agricultural Department of the Province. Assistance is given in the improved cultivation by vernacular overseers trained at one of the two agricultural training colleges of the Province. Among the satisfactory, if modest, results may be noted that 36 societies grew seed (wheat and cotton) in 1928 for their members and that 29 sold seeds to non-members. Useful work is also done by silt clearance societies (26), and by milk recording societies (21). As an illustration of the special difficulties of effecting livestock improvement in India, an extract may be quoted from the description given by the Registrar of the latter. "All that the members do is to allow their cows to be milked once a week in the presence of the Sub-Inspector (of the Punjab Co-operative Union). This sounds simple enough but is actually difficult. Cows cannot usually be collected together to be milked for fear of the evil eye. Women who generally do the milking are shy of appearing before an official. They are also curiously secretive about the milk and sometimes even think it a sin to measure it".

Reference has already been made to the work of the Better Living societies in effecting economies in expenditure on ceremonial occasions. This is as a rule their main object, and in 1927 there were 136, and in 1928, 231 such societies with 5,350 and 8,665 members respectively. They however function as temperance societies, and also aim at the suppression of gambling and even smoking. Women are induced to sell their jewellery and deposit proceeds in co-operative societies. In one society the ornaments of women were cut down from Rs. 3,600 to Rs. 500; the women refused to submit unless their husbands took the pledge of temperance, and the pledge was taken. Some societies aim at improving the health and sanitation of the villages, and 19 have introduced and enforced a rule that all refuse and manure should be pitted; in other cases streets are swept daily, the supply of drinking water improved, quinine distributed and plague inoculation insisted upon.

An experiment of special interest has been made in the Gurgaon district of the Punjab, which lies to the south west of Delhi and includes a population of nearly 700,000 people living in 1,400 villages, under the usual insanitary and depressed conditions. Under the direction of an official of remarkable vigour and enthusiasm, assisted loyally by his staff, a somewhat original scheme of propaganda has been worked out over a number of years for the improvement of village life and for better living in the wider sense. "Lecture, song, drama, magic lantern, occasionally the cinema and even the loud speaker are made to contribute what they can to arouse the people to a realisation that they are themselves largely responsible for their own undesirable condition... Side by side with the propaganda campaign, there are provided facilities for those who wish to follow the advice thus tendered. Good seed, selected seed, ploughs, well-gear, quinine, inoculation and so on are readily available". In addition co-operative societies are promoted, and adult schools and domestic economy classes are provided. Considerable results in improved sanitation and in general conditions have followed, but the feature which is calculated to ensure permanence is the training of selected villagers as "village guides". Sons of cultivators are offered a course of training in principles of sanitation, co-operation, agricultural improvement, etc., so that they may act as "guides" in a group of villages. In this way the propaganda becomes as it were internal and familiar, and ceases to be exclusively given "de haut en bas". It is also often remarked that at present there is a decided risk of the villager becoming confused by the multiplicity of the services offered

to him. Concentration so far as possible in one person of the advice given is desirable, while for matters strictly technical the "guide" will naturally give direction as to where to go for advice rather than give it himself.

It would seem probable that it is on some such lines that progress both in agriculture and in rural welfare may be mainly achieved. The difficulties are very great, since apart from the magnitude of the problem in point of the actual area and of the immense numbers with which the administration has to deal, it has always to be remembered that the peoples of India are the heirs of a civilisation of immense antiquity through which have been transmitted methods of thought and standards of life differing from those of Western civilisation, and it is incumbent on their Western rulers to respect these.

C. H.

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The Rural Exodus in Switzerland.

In certain valleys of Uri, Schwyz, Unterwalden, Glarus, Appenzell, in Grisons, Valais and Ticino, the rural exodus has assumed since the war disquieting proportions.

It would be impossible, within the limits of this article, to study all the causes of this modern phenomenon affecting agriculture causes which are extremely complex. Among the factors which play an important part are soil, climate, exposure and altitude. The long winters of the Alps, which completely paralyse agricul-

tural work and afford no opportunity to the peasant of any earnings, are undoubtedly one element tending to bring about depopulation of rural communes. The main reason however for the migration of the younger generation is that it has become exceedingly difficult to make a living on the land. As long as the needs of the peasant family were adjusted to their production, they remained attached to the soil from which they drew their sustenance. But as soon the household economy came under the influence of the exchange or money economy, needs multiplied, and since the returns from the soil could not be proportionally increased, the population became too dense for the land.

The agricultural crisis has attained its height in our own time now that prices of products no longer cover the costs of production. The average proceeds of work of four francs per day realised by the farmer is not enough to enable him to meet his requirements. In addition, since the war, the cultivation of cereals has been replaced almost everywhere in Switzerland by stock breeding which requires less labour.

The interest in agricultural activity is decreasing, as the conditions of existence are relatively more favourable in the towns and in the urban agglomerations that grow up in the neighbourhood of factories.

It is in this way that in 1928 the town of Zurich, where the birth rate is falling, has experienced an increase in population of 9000 persons. The peasant family, to quote M. Laur, is the generating cell which renews the youth of the towns, and infuses new blood into their economic and intellectual life. But it is of importance to make sure that the urban agglomerations do not absorb more than the surplus peasant population. On 6 October, 1926 the Federal Council accepted the Baumberger proposal which invited it to make an enquiry into whether the swelling of the army of consumers involved a fall in the peasant population. The result of the enquiry, published in July 1929 in the third part of the Swiss statistical communications, has revealed that the rural population is diminishing in certain communes while in others it is increasing.

The following table, taken from the same source, indicates the proportional variations of the population figure :

	Grisons	Ticino	Valais	Berne	Other cantons
Number of communes under review	222	261	171	51	196
" communes situated :					
above an altitude of 700 m.	180	73	119	26	103
below 700 m	33	188	52	25	93
Communes increasing in pop.					
above 700 m	74	19	87	14	71
below 700 m.	21	108	51	18	77
Communes decreasing in pop. .					
above 700 m	115	53	32	12	32
below 700	12	80/78	1	7,5	16/13

On the plain the fall in population is making itself felt in fewer communes than in the mountains, but it is more intense. In Ticino especially it much exceeds that of the communes situated above 700 m.

The wave of emigration is found to occur primarily in the valleys which lead up to the former passes of the Alps the importance of which has been lost owing to the construction of railroads ; in the canton of Grisons, for example, in the upper valleys of the Hinterrhein, of the Oberhalbstein and the Safien as well as for 12 communes of the lower part of the Landquart valley, the Vorderrhein, the Hinterrhein and the Moesa.

On the other hand the same canton shows a striking increase in population in the valleys where fashionable mountain resorts have been established. At Arosa, the number of inhabitants, between 1850 and 1920, rose from 6,897 to 22,213.

In Ticino, the percentage of depopulation is 46.0 in the Val Verzasca and 41.8 per cent. in the Vallemaggia. In the Valle di Blenio the coefficient is 18.1 per cent., the figure rises to 27.5 per cent. in the upper valley of the Levantina.

Passing on to Valais, it will be seen that the number of the inhabitants of the 15 communes of the Val de Conches affected by the depopulation has fallen, during the period between the years 1850 and 1920, from 2,880 to 2,423, which corresponds to a decrease of 15.9 per cent. The Val d'Entremont shows a decrease of 7.4 per cent.

In Canton Berne, the Oberhasle and the upper Simmental have lost, the one 42.4 per cent. and the other 17.9 per cent. of their population.

In the Entlebuch in canton Luzern, Toggenbourg in St. Gallen, Aigle and the Pays d'Enhaut in Canton Vaud, and in some regions of Upper Appenzell-Rhein and of Nidwalden the younger generation is also leaving the land.

In the majority of cases, the depopulation does not exceed 20 per cent. but 36 communes of the alpine regions show a decline of 40 per cent and over. Wergenstein in the valley of Schams, has lost $\frac{2}{3}$ of its inhabitants. Dalpe in the Levantina valley 61.1 per cent., Frasco in the Val Verzasca 60 per cent. At Corippo, in the same valley, the population has diminished by 66 per cent.

In the cantons of Berne and Valais, the depopulation is the result of a very marked emigration. In Ticino where there is wholesale desertion of certain communes a decrease in the male population has been noted; in Grisons on the other hand it is the number of households that are decreasing.

The following table gives information on the distribution of the population of Switzerland in age groups (per thousand):

Age groups	1860	1888	1920
Up to 19 years	392	415	379
from 20 to 39	316	286	308
from 40 to 59	206	205	220
60 years and over	86	94	93

The loss caused by the départure of the inhabitants of working age is clearly shown in the comparison given above. The proportion of the elderly and aged persons steadily increases.

It is undoubtedly interesting to compare the rural exodus of the Swiss Alps with that of the Austrian, Italian and French Alps. Dr. Hans Bernhard remarks that the decrease in population is less marked in the Eastern Alps at present than during the last census periods. It is more accentuated on the Austrian side than on the Italian side of the ranges. The decline is also felt in certain isolated communes of the Bavarian Alps. The abandonment of the country districts, in the main Alpine mountain block, is more serious in the West than in the East, and the movement attains its greatest intensity in the French Alps. The regions which are most readily depopulated are those which adjoin countries more favoured as regards climate, etc. The department of Basses-Alpes has lost 56,000 inhabitants in 70 years. In a number of the communes in the department of Drôme, the population has decreased by 80 per cent. As regards Savoy, it stands first and foremost in respect of emigration.

The figures published in the IIIrd Part of the Bulletin of Swiss Statistics have proved to the Federal authorities that the desertion of the country districts may assume in Switzerland the character of a national danger. The Union of Swiss Peasants has also published this summer (1920) a pamphlet showing that the peasant farmer is earning less than before the war while the town workers have doubled their wages, and that the rural exodus is aggravating the problem of employment in the towns. This publication of the Union thus justifies the price policy adopted by the authorities. The best means of giving really effective aid to agriculture is, according to Dr. Laur, to adapt the prices of agricultural products to their cost of production which cannot be further reduced.

In their turn, the Cantonal authorities do everything in their power to mitigate the hard life of the mountain populations. Encouragement is given to the movement for land settlement, special schools of agriculture are established, and mountain experiment farms, where the student of the upper valleys receives the instruction he needs. If he had spent time instead on the fertile lands of the plain, he might be tempted to leave his native mountain for ever.

The cantonal authorities are constructing modern scientific plant for the dairy industry, and stabling of hygienic type in the mountain pastures. They undertake land improvements, and minor repairs and improvements; they make roads of communication on the mountain sides, form unions, insurance associations, and encourage the breeding of small farm stock, bee-keeping, poultry and rabbit farming.

It is also proposed to introduce home crafts and industries, a particularly effective means of increasing the earnings of the population, especially in the dead season. On 3 May 1920, the Council of State of Canton Vaud adopted a programme which makes provision for :

- (a) the vocational instruction of boys and girls at the Ecole de Marcellin ;
- (b) the development of subsidiary crops and the improvement of the alpine crops ;
- (c) the introduction of home crafts.

The types of home crafts under contemplation are : weaving, machine knitting, embroidery, making of wooden utensils, basket-making, turning in wood, carving, etc.

The Canton of Valais is making an attempt to transform the *mayens* (pasture grounds where the stock is grazed in spring and autumn, before and after the time spent in the high pastures) into common or jointly owned pasturelands. In certain valleys each family owns a number of *mayens* and farm buildings lying at intervals along the valley. This results in considerable loss of time, and in heavy amortisation and repairing charges on the capital invested in buildings.

Both farming experts and economists are endeavouring to adapt agriculture to the times, to intensify and rationalise production, and are trying to check rural depopulation. At the same time, attention is being given to the provision of vocational instruction for the peasant farming family, to the raising of the intellectual and moral standard, and to giving the peasant an interest in the prosperity of agriculture.

F. D.

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MARKETING OF AGRICULTURAL PRODUCE

Sugar Beet Selling Agreements.

If at the present time agriculture is suffering depression one of the reasons for this parlous situation is the organisation of sale of products. This is as a rule defective, even as regards products of prime necessity. Consumer and grower meet and the bargain is made. The price is fixed in accordance with the law of supply and demand, in other words the method of sale is in practice neither more equitable nor more systematic than that which was followed on the markets of ancient Egypt. Moreover if it is desired that the farmer shall continue his function of production of raw materials and food supplies, it would seem that he ought to be fairly and justly remunerated.

It is not to be inferred from the above that the interests of seller and buyer always coincide. It may however be supposed that there is scope for an advantageous association between the grower of the raw material and the first transformer. The example that it is proposed to deal with here is that of the sugar beet selling agreements, and the agreement that has been brought into force in the refineries of the French departments of Nord and Pas-de-Calais may be now be examined.

Before giving a detailed account of this agreement, it may be noted that, in this country of intensive agriculture, group interests had for some time past ranged the farmers, men of progressive type with considerable scientific knowledge, with capital and scientific equipment at their disposal, against the sugar manufacturers whose vocational and technical qualifications were on an equally high level. The sugar manufacturers are grouped in several associations, but the subject of the present article is the dispute which occurred between one of these groups, the *Union des Industries Agricoles*, and the *Confédération générale betteravière*, represented on the occasion by the local interdepartmental *Commission betteravière*.

The operations of the farmers in the sugar beet regions are governed in France by two very explicit Decrees, one of 7 April 1897, and the other that of 23 July 1898. By these is established a weighing of the sugar beets to determine the *net weight to be paid for*, the net weight of the beets being equal to the gross weight of the cart when full less the weight of the empty cart, and the net weight to be paid for being equal to that net weight less the weight of the wastage or tare.

The method of determining the weight of the wastage consists in deducting from a fixed sample, as a rule 25 kilogrammes, taken at random from the whole, the weight of the collars, the rootlets and the earth adhering thereto. For this purpose the beets are topped at the point from which the leaves spring, washed, brushed and gently scraped without in any way damaging the tap root. The density of the juice has now to be calculated. These same beets after washing are grated and pressed, and the juice which exudes is weighed on the densimeter, with due corrections for temperature. It is this density which in France is to serve as basis for the establishment of the price.

It may be said in passing that in Belgium saccharine content calculated according to the Sachs-le-Docte method used to serve as basis for the market. The method described therefore marks a progress in fair dealing, as there is no constant ratio between the density of the juice and its saccharine content. It may be supposed that the drawbacks counterbalance each other, since if at the end of the season the sugar content comes out to the benefit of the manufacturer, at the beginning, on the contrary, he is compelled to transform juices of 7.5° density of which the sugar content does not correspond to the 1.90° sugar of the weight of the beet-root stipulated in the agreement.

For a product delivered in the finished state and ready for immediate consumption, the determination of the base price should be easy. For sugar beets it is nothing of the kind, for the markets are held as a rule in the spring (February-March), i. e. the manufacturer has sold his sugar before it is made and the peasant farmer has sold his sugar beet before it has been sown. The task of an agreement between these two producers is to turn them from two antagonists into two associates. This is done in effect by their contract which if not completely equitable in form shows a near approach to completeness if compared to the anarchy which still prevails in the methods of sale of the other products of the soil, for example of grain.

The price of the ton of sugar beet (net weight) will be supplied by means of a sliding scale on which the base density is 7.5°. The ton will be paid at the rate of 75 per cent. of the market price of sugar so long as that price is not below 230 francs.

If the price of sugar is below 230 francs, for each franc that it is below this level the percentage of 75 per cent. will be reduced by 0.10 per cent., the lower limit of this percentage always however remaining 70 per cent.

Every tenth of a degree of density between 7.5° and 8° will be paid at the rate of 0 fr. 80 per 100 francs of the basic price. Above 8° every tenth part will be paid one franc per 100 francs of the basic price.

A decrease in price of 1 fr. 20 per 100 francs of the basic price will be made on every tenth part less than 7.5° down to 7°. Below 7° the beets may be refused.

For fixing the basic price, the sworn brokers at the *Paris Bourse de Commerce* establish the average of quotations of white sugar No. 3 homegrown on the quantities available for the months of November, December, January, February, March, April, May and June. So as to allow for warehousing costs, the January quotation is reduced by 2 francs, the February by 4 francs, the March by 6 francs, the April by 8 francs, the May by 9 francs and the June quotation by 10 francs.

It may be noted that these prices on the *Paris Bourse* are in close relation with those of the Exchanges of London, Brussels and Berlin and thus are maintained or can be maintained at the world level.

The farmer finds himself also closely linked with the manufacturer for the removal of the residues, the pulp or slices which are of such great assistance in winter as feed for the work oxen, for fattening the young heifers and bullocks, and the worn out stock. They are a valuable reserve feed which if silaged keeps for months, while from the point of view of the manufacturer they are merely a form of lumber.

Hence the manufacturer passes over this material to the farmer, at the price of 25 francs per ton, 45 per cent. of the weight of beets consigned, delivered free on station or wharf. If the farmer wants to purchase more, the manufacturer sells the slices at 40 francs per ton or 60 francs according as the percentage of pulp is between 45 and 60 per cent. or over 60 per cent. of the weight of beets consigned.

In the other parts of France it is not always Departmental Sugarbeet Committees (*Commissions betteravières départementales*) which represent the farmers' interests, there are also sugar beet syndicates or unions grouping the growers supplying

a particular refinery (Meaux, Pithiviers) or the growers of a certain region (Limagne, Normandy). The agreements for these latter organisations are nearly identical with those of the north of France. In these cases account is taken only of the density of the juice, but provision is made for an addition to the price paid in the case of a rise in the prices of sugar.

The localisation of the sugar industry is such, in France, that below the latitude of Paris are to be found only the unions of the *Société d'Agriculture* at Provins and those of the *Planteurs de betteraves* at Troyes, Pithiviers, Loiret, Limagne, Isère et Vaucluse.

Any contract is good if both parties willingly agree to it. In certain countries of advanced agriculture, such as Czechoslovakia, provision is also made by the parties for an arbitration court consisting of four members, two nominated by the growers and two by the factory. The two parties appear before this tribunal which follows the same procedure as a civil court. In the event of disagreement each of the complainants chooses an expert or the two parties may even agree to refer the matter to the judgment of the same expert who places his conclusions before the arbitration court.

The Czechoslovakian agreements include two prices, a fixed and a variable price, between which the farmer can choose. If he does not decide before 30 April, he receives the fixed price. Moreover, the beet is sold by the weight, i. e., the net weight, reckoned at the rate of 95 per cent. of the gross weight under ordinary conditions. If at the time of delivery a sample quintal shows more wastage than the 5 per cent. allowed for, the factory accepts the beet but makes a larger deduction for tare by a quantity which is to be discussed between the grower and the manufacturer. The same is done if the beets are frozen or decayed.

The fixed price is a contract price and extends to the beet crop of a single season. The variable price is reckoned on the average of the offer and bid announcements of the Prague Exchange. As however there is but little business being done now in consequence of the stagnation prevailing in this industry in Central Europe, it has been necessary to provide for the establishment of the demand price as a function of the offer and vice versa. If there is no demand price, it is artificially established by adding ten Czech crowns to the "bid" quotation. By subtraction of ten Czech crowns the bid quotation is established as a function of the demand price. In any case the grower is guaranteed a minimum price per quintal of sugar beet.

The subsidiary clauses of the agreement are also of interest. Per quintal of beet delivered the grower received free 4 kilogrammes of sugar for his own consumption. The scums of the refining process are returned to the grower up to six per cent. of the weight of beets consigned. Molasses is also supplied to him on conditions fixed by the agreement. One fourth of the percentage of the molasses yielded by his own beets is passed to the grower free, while another fourth is supplied to him at a special price. If the grower wants more than half the molasses, the quantity over and above the half is consigned to him at the ordinary trade price.

The problem of the arbitration court has been solved in Poland by the intervention of government, which acts as final arbiter if appealed to. Moreover there are two kinds of agreements in use in Poland; in Western Poland which was formerly attached to Prussia, the refinery often belongs to the growers themselves who are the dominant element on the management boards of the factories. Thus in this case as in Germany, the crop does not form the subject of agreements between farmers' associations and manufacturers, but between the factory and the grower who is himself often a shareholder in the factory. The sugar beet growers of these

regions are organised in an association which is not a co-operative society (*Genossenschaft*) but a union (*Verein*). It is called the Union of the associations of sugar beet-growers of Greater Poland and Pomerania (*Związek stowaryszeń Plantatorów Buraków Cukromych Wielopolski i Pomorza*). The headquarters office is at Poznań.

AGRICULTURAL LEGISLATION

Summary of Laws and Regulations.

BELGIUM. — Arrêté royal concernant les oiseaux insectivores et tenderies. — 25 octobre 1920. — *Moniteur Belge*, n. 321 (19 novembre 1920).

[The measures contained in the above order which introduces rules on the protection, the pursuit and the snaring of insectivorous birds and winter birds not considered as game are not applicable to foreign birds, water and birds frequenting river banks, pheasants, partridges, quails, barn door fowls, rails, heath cocks, grouse, wood cocks.

It is prohibited at any time to capture, kill or destroy, even within enclosures, gardens, parks and orchards, to expose for sale, to sell, buy or transport insectivorous birds included in the list contained in the present order, as well as their eggs and their young.

Daylight birds of prey as well as their eggs and young ones may be destroyed at any time, even by means of fire arms. Wild birds not mentioned in the above list may be captured or destroyed during the period running from 25 September to 24 November only. Certain exceptions are however granted, but it is absolutely prohibited to capture these birds when the ground is covered with snow. Cage birds may only be captured alive and not for table purposes. With this object the transport, exposure for sale, the sale and the purchase of dead birds are only allowed provided the head at least of the bird is completely covered with feathers. The transport of finches and linnets for singing competitions as well as all other living birds for exhibition is only allowed during the period running from 11 December until 25 September. A certificate granted by the local authority must also be produced. The detention of birds deprived either temporarily or permanently of their sight is prohibited. It is also prohibited to lay snares for birds by means of nets or to lay running knots for thrushes, even within enclosures, gardens, parks and orchards, without a special permit. It is prohibited at any time to use for the capture and killing of birds, bird lime, bait composed of poisonous substances or drugs, or running knots placed on the ground or in other places. It is also prohibited to use night birds of prey, whether living, dead or stuffed with the exception only of stuffed eagle-owl, for the destruction of daylight birds of prey and of jays, pies, ravens and crows. It is prohibited to use traps capable of killing or wounding the birds as well as to use nets and cages except during the period allowed for snaring. The order however allows certain exceptions to the above provisions.

It is prohibited to take, kill or destroy in any manner whatsoever wild birds even of a harmful kind, without the written consent of the proprietor or his authorized representative.

Birds killed, captured, transported or exposed for sale in spite of the provisions of this article will be seized; any found alive will be released. It is further prohibited at any time to capture, kill, destroy, expose for sale, sell, purchase or transport sea-gulls, sea-mews, terns, sea-swallows, storks and spoon-bills as well as their eggs and young.

Any breach of the above provisions will be punished in accordance with the law on the pursuit of game, passed on 28 February 1882].

ITALY. — R. decreto n. 1530. Nuove disposizioni in materia di bonifica integrale. — 26 luglio 1929. — *Gazzetta Ufficiale*, n. 214 (13 settembre 1929).

[This decree authorizes the constitution of consortia of land owners for the building of roads and aqueducts as well as for effecting operations for land improvement in general from the agricultural standpoint. The constitution of these consortia is governed

by the same measures as those governing the constitution of first category consortia for hydraulic improvement.

The administrative consortia already in existence may, by resolution passed by their respective general meetings and in accordance with the terms of their respective articles of constitution, undertake the carrying out of some or all the operations contemplated in the law on comprehensive land reclamation. All consortia, whatever their character, who have undertaken the agricultural reclamation of their respective territory may be authorized by order of the Ministry of Public Works or of the Ministry of National Economy, to extend their activity so as to include the improvement of land situated beyond their area. It is laid down however that such land must be situated in close proximity to the area in question and must not be the property of other institutions entitled to carry out reclamation works.

The Presidents of consortia which are authorized or which propose to carry out public enterprises having a certain measure of importance, are to be appointed by the central Government.

The contributions due from the various societies may be collected according to the forms and privileges laid down by the law on direct taxation.

The decree also makes a further amendment in article 8 of the law of 18 May 1924, No. 753, which reads as follows :

"The concession is allowed of all operations reserved to the State, which are necessary for the transformation of an entire zone or of a particular basin or of separate units which can be usefully treated as individual units for the purpose of transformation.

"The concession is granted on the basis of a scheme of the operations to be carried out. If the works are to be carried out according to separate units, the scheme must be accompanied by the general scheme comprising the entire zone or the particular basin.

"When the concession of each lot is granted the amount of the supplementary State contribution will also be fixed."

The State contributions and other contributions towards the cost of land reclamation, land transformation, hydraulic and forest-hydraulic operations effected by concession vary according to the volume of the operations effected. They are liquidated on the basis of the tariff fixed *in vacuo* when the scheme submitted is approved]

INDIA. — *A Bill for the Protection of Cattle.* Legislative Assembly Bill No. 25 of 1929. 26 July 1929. *The Gazette of India*, No. 39 (28 September 1929).

["The Statement of Objects and Reasons" accompanying this Bill refers to the "serious hardship" suffered by the people in general and by infants in particular as the result of the rise in prices of dairy products consequent upon the "enormous" number of cattle slaughtered every year for the purpose of trade. The Bill proposes to make it a penal offence to dispatch or attempt to dispatch from India by sea or land the meat of cows, bulls, bullocks, or buffaloes or to carry on as principal or agent trade in cattle meat for export].

** *A Bill to prohibit the export of cattle.* — Council of State Bill No. 9 of 1929. *The Gazette of India*, No. 39 (28 September 1929).

[This Bill is accompanied by a "Statement of Objects and Reasons" practically identical with that mentioned above. This Bill however, applies to live cattle and proposes to punish by fine or imprisonment any person who "exports or carries coastwise cattle from British India or carries such cattle by road, rail, water or air within British India for the purpose of such export or carrying, coastwise". Cattle is defined as "cows, bulls, bullocks and buffaloes as well as their calves"]

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INTERNATIONAL REVIEW OF AGRICULTURE

PART II

MONTHLY BULLETIN

OF

AGRICULTURAL ECONOMICS AND SOCIOLOGY

ECONOMIC AND SOCIAL CONDITIONS
OF THE AGRICULTURAL CLASSES**Rural Housing.**

In recent years the question of rural housing has increasingly engaged the attention of the Governments and of the principal agricultural organisations (1). It has usually been found, as a result of inquiries made, that houses in rural districts are insufficient in number or in an unsatisfactory condition, even at times when agriculture is flourishing and when a general good standard of life is maintained.

Naturally the problem does not present itself everywhere in the same form nor with the same character of urgency and gravity. In the old countries, of ancient agricultural tradition, and with prevailing intensive cultivation, the insufficiency of the houses is a consequence either of an increase in population or of the division of the larger cultivation units or the subdivision of families or of the industrialisation of the farming which in making a demand for labour increases the housing requirements; in the new countries on the other hand the demand for houses appears and grows along with the settlement activity and with the process of allotting farms and bringing the land under cultivation; in the countries where there has been agrarian reform, the breaking up of the large estates into small allotments has brought into sudden prominence the problem of rural buildings and in general of the equipment of the new small holdings.

The measures passed in recent years whether on the subject of land settlement, or on that of land reform include, it is true, special provisions for the encouragement of the erection of houses on the lands to be settled, and frequently also the measures relating to agricultural credit, to land improvements or land reclamation on a large scale, contain regulations with the same object. But in general the activity of the Governments has been up to the present time directed towards urban building, and that for well known reasons which explain, if they do not justify, the fact that this imposing development of building in the cities has had no parallel in rural centres.

(1) The question was also discussed — in connection with that of the rural exodus — in the meeting of the Joint Agricultural Advisory Committee formed to co-ordinate the work of the International Institute of Agriculture and the International Labour Office, held in Rome from the 7th to the 9th November 1929. At this meeting it was proposed that the question should be studied jointly by the International Institute of Agriculture, the International Labour Office, the Hygiene Organisation of the League of Nations and the International Institute of Hygiene, of Paris. *

Undoubtedly the difficulties to be overcome in regard to farm buildings are very many and of varied character, financial, technical and social, becoming the more complicated as the farming becomes a question of intensive rather than extensive cultivation, especially when there is further added an agricultural industry involving a specialised activity with considerable employment of capital and labour.

Among the difficulties already mentioned comes first the high cost of building, sometimes reduced by utilisation of local resources, in particular of building material found on the spot, which while effecting economy in expenditure also tends to give the building a characteristic appearance and a pleasing local colour.

It is precisely on account of the high cost of rural buildings that the Swiss Peasants' Union has established that Advisory Buildings Office which has become so well known and of so much importance. This body may either confine itself to making plans for building or go so far as to undertake the direction of the work. Its precise aim is to achieve a satisfactory utilisation of existing means in view of a scientific and hygienic system of building, with good selection of materials, etc., while at the same time paying attention to the style of architecture most adapted to the particular region.

It is easy to see that the cost will vary in accordance with a number of factors connected with the particular rural environment and with the requirements of the rural classes in relation to such environment.

As regards *Switzerland*, building costs have more than doubled or trebled in the post-war period ; it is calculated that these costs for rural dwellings (1) used to amount on an average for each farm — including the kitchen and the dining room in common for the farm workers but excluding the sleeping rooms for these persons, the cellar, the store for seeds and the fertiliser shed and the implement shed — to about 5,500 francs. Including the cellar, etc., the cost should not exceed 7 or 8 thousand francs; as a matter of fact at the present time it is necessary to provide for an expenditure of from 15,000 to 20,000 francs and more. Only peasant farmers who own the larger holdings, who are not indebted and who have some additional income find themselves able to set aside these larger sums for the building of a house. The small peasant farmers must on the other hand be content with dwellings of a much more modest type.

In *France* the necessary expenditure for rural building was valued in pre-war times for holdings of average size as from 800 to 1000 francs per hectare. The yearly interest corresponding to a rate of 5 per cent, was thus from 40 to 50 francs, a figure already considerable as compared with the letting value of one hectare. At present the situation is aggravated, from the fact that the cost of building is multiplied by a coefficient higher than 4 (2), while the letting value of lands on the whole in France was scarcely doubled.

In *Germany* it is reckoned that a rural dwelling costs to-day on an average at least 6,000 marks ; only in exceptional cases, that is to say when the work of building is executed in part by the person concerned, utilising old materials and effecting other economies, can a house be built for say 3,000 marks.

In *Italy*, according to an enquiry of a technical and economic character undertaken by the National Institute of Agricultural Economy (3) on types of rural build-

(1) LAUR, Prof. Dr. E. : *Landwirtschaftliche Betriebslehre*. Verlag Wirz & Cie, Aarau, 1927.

(2) PHILIBERT J. and ROUX O : *Genie Rural*, Deuxième éd. complètement refondue par M. PORCHET. Paris, Dunod, 1927.

(3) ZUCCHINI Prof. Dino : *Nuove costruzioni rurali in Italia*. Emilia, Romagna, Veneto. Istituto Nazionale di Economia Agraria. Studi e Monografie, N. 4. Roma, 1929, Anno VII.

ings erected in the course of the last few years, the cost of rural buildings varied between fairly wide limits, according to the region (*e. g.*, it is less high in Venetia, higher in Emilia and still higher in Romagna), according to the locality, the fall of the land and the type of building adopted. In these regions for farms held on a share tenancy of from 10 to 25 hectares, the average cost can be reckoned at 6,700 liras per hectare, and the maximum expenditure may be 8,000 liras. The cost per cubic metre "a vuoto per pieno" for houses with large rooms may amount to 35 liras, while for buildings with small rooms, especially if in hilly or mountainous regions, the cost may rise to 80 liras and exceptionally to 100, hence the average fluctuates about 55 liras. For farms with differing farming systems, the cost of the buildings as reckoned per hectare varies mainly in accordance with the system selected, and hence it is difficult to form an idea from the cost of whether the building is essentially economical or not.

The cost of building has also perceptibly risen in the new countries; taking as an example a country which is essentially agricultural, Canada, it is interesting to note the course of the price index-numbers in the last 15 years relating to building materials the prices of which have so great an influence on the total expense. The variation was as follows:

Price Index-numbers of building materials in Canada (1).

(Base year 1926 = 100).

1914	62.9	1922	108.7
1915	60.5	1923	111.9
1916	69.6	1924	106.6
1917	87.6	1925	102.9
1918	100.9	1926	100.0
1919	117.3	1927	96.1
1920	144.0	1928	97.4
1921	122.8		

This increase in the cost of building explains the serious stagnation in rural house building, more especially when the present agricultural situation is taken into account, hampered as it is by a severe crisis in prices. As a consequence it is necessary to obtain the funds required on credit, and here a fresh difficulty arises, as the cultivators who are most in need of houses are precisely those least able to obtain loans or to pay the interest required on the money market for such investments, which are barely remunerative and on which the return is slow.

It is for these reasons that the necessity becomes clear of a more decisive intervention on the part of the Governments who, in view of the far reaching social and economic interests bound up in the problem, cannot refuse their effective support. As will be seen a number of Governments have at different times passed special housing measures in favour of agriculturists and have even outlined schemes for

CASTELLI, Prof. Mario: Nuove costruzioni rurali in Italia. Marche, Umbria, Abruzzi. Istituto Nazionale di Economia Agraria. Studi e Monografie, N. 6. Roma, 1929, Anno VII.

ZOLI, Ing. Livio: Nuove costruzioni rurali in Italia. Sardegna. Istituto Nazionale di Economia Agraria. Studi e Monografie, N. 9. Roma, 1930, Anno VIII.

(1) The Canada Year Book. 1929. Dominion Bureau of Statistics. Ottawa, 1929.

dealing with the subject on comprehensive lines, but much still remains to be done in view of the urgency of the need. Among the more liberal measures may be mentioned the free grants or grants at a low rate of interest from public funds, and assistance in the payment of interest on loans contracted for building purposes.

There can be no doubt that when the dwelling is at a distance from the farm, the long walk or journey to and from the scene of work, the consequent reduction of the period of repose, the length of time for which some members of the family must be away, etc., are all factors which reduce the working capacity. On the other hand there is equally no doubt that when the dwelling, although actually on the farm, is not adequate to the needs of the farming enterprise, or is unhealthy or altogether unsuitable, the consequences for production are also prejudicial.

The idea is becoming more and more widely accepted that even the development of production is to a great extent conditioned by the existence of suitable housing accommodation (1).

Following on these general remarks, some information will now be given, in respect of a preliminary list of countries, sufficient to give some idea of the work undertaken and the systems adopted by the Governments or by various institutions with the object of hastening the solution of the rural housing problem, and in this way to reassert the great importance of the subject.

ARGENTINA.— The housing in the country is not yet wholly satisfactory, especially on rented lands, as the tenant who remains on the farm usually for a period of not more than five years has no interest in making proper provision. Lands held in occupying ownership, on the other hand, which represent about 35 or 40 per cent. of the area under cultivation are provided with houses built of brick and reasonably comfortable.

The housing conditions are on the whole tending to improve, in particular as the result of Law No. 11,170 of 7 October 1921 which empowers the tenant to erect on the farm a two-roomed brick house, a kitchen, a store-house, a covered cart shed, a silo of modern type for cereals, a well, and in addition to plant five fruit or shade trees per hectare up to a maximum of 500 plants for the whole of the farm, the whole with a claim to compensation on the part of the owner at the time of his quitting the farm, up to 10 per cent. of the value assigned to the land in question as shown in the Land register.

BELGIUM. — With the object of checking the rural exodus which at times, owing largely to the attraction of the higher wages paid by industry, is a source

(1) In regard to the special question of the hygiene of houses, from 23 to 25 July 1928 there was held at Geneva the Hygiene Conference arranged by the special Section of the League of Nations. The report gives a statement of the views of members of the Conference on the development of rural hygiene in the countries visited, and it is noted that the stage of progress of the rural populations is the result to a marked degree of the various types of dwellings and that builders still are usually without precise scientific information on certain details of construction as regards hygienic requirements, e. g., the size of the windows, kind of glass or other material employed, and in particular for rural housing, ventilation and cubic air space. In the same report stress was laid on the necessity of proceeding to enquiries and investigations, particularly from the international point of view, for the purpose of determining the possibilities of applying to building the modern knowledge of physiology. The International Institute of Agriculture has established relations with the Hygiene Organisation of the League of Nations and with the International Institute of Hygiene at Paris, and has agreed to a scheme prepared by these bodies whereby a minimum of hygiene requirements are insisted on for rural dwellings.

of anxiety (1), measures have been adopted in Belgium for introducing more comfort into rural life. In this country the aesthetic values of rural life have always been a subject of careful and constant study. At the International Exhibition at Ghent in 1913 a model known as the "Modern Village" was on view shown by the Ministry of Agriculture, and intended to give a clear and concrete idea of what a centre of rural life should be, complete in every part, and with all the buildings essential to the public services as well as to the needs of farming, in short fully corresponding to the modern requirements of country life (2). The well known activities of the *Commission pour l'Embellissement de la Vie Rurale* are directed towards the improvement of social life in the country districts. This Commission, *inter alia*, arranges competitions with prizes for the villages which adopt measures for such improvement, and is also at present engaged in organising a new "Modern Village" for the Liège Exhibition of 1930. As a result of the work of this organisation important improvements have been introduced into the construction and equipment of farm workers' houses and other rural buildings.

E. Tibbaut, a profound student of Belgian agricultural economy, has recently stated that the best means of populating the country districts consists in "multiplying the dwelling house facilities and the opportunities of acquiring ownership".

It is under the influence of ideas such as these that the Belgian Government has for some time past done much to facilitate ownership of small holdings and has given full encouragement to workers whether of town or country who are anxious to secure houses for themselves. The legislation on the conditions of State intervention in the matter has been planned on most liberal lines. By the Law of 11 October 1919 the *Société Nationale des Habitations à bon marché* was formed, the object of which is to advance funds at a low rate of interest to local and regional societies for cheap dwellings. The number of local societies taking advantage of these facilities and undertaking the business of erecting houses with State financial aid and under the supervision of the *Société Nationale* was 274 on 31 December 1927, and 253 of these were definitely constituted. Their share capital amounted to 240 million francs, of which 48 million were paid up. The State advances to the *Société Nationale* amounted, at the same date, to 661 million, and in addition 69 million were lent by different institutions or by the State for special purposes. With these resources the *Société* has erected or was in course of erecting at the end of 1927, houses for letting to the number of 29,877. In addition 4741 houses had been sold, including 4559 on which there were premiums granted by the State. This system of grants had been instituted in 1922 with the object of rendering it possible for families with modest means to acquire ownership. The number of premiums which the Government was authorised to grant had been raised by the Decree of 17 February 1927, to 12,500; it has, however, been considered necessary to revise, by the Royal Order of 31 January 1929, the conditions laid down for the grant of premiums. According to this Order, the premiums granted will vary from 2,000 to 3,500 francs according to the size of the commune in which the house stands; they may be increased by 10 per cent. for each of the two first dependent children of the beneficiary and by 20 per cent. for each additional member (3). The value

(1) See: ULENS Robert: The Rural Exodus in Belgium. *Monthly Bulletin of Economic and Social Intelligence*, No. 5, 1914. Rome, International Institute of Agriculture.

(2) The Modern Village at the Ghent International Exhibition. *Monthly Bulletin of Economic and Social Intelligence*, No. 3, 1914.

(3) The province of Namur has been granting up to the present a premium amounting to 25 per cent. of the State subsidy. A proposal has been brought forward that in the future the total of the premium granted by the province will amount to 50 per cent. of the State subsidy. .

of the dwelling house must not exceed 50,000 francs in the rural communes. Beneficiaries must, on the other hand, prove that their total income subject to the super-tax does not exceed certain maxima corresponding to gross returns of 17,000 to 23,000 francs according to the importance of the locality, and with an allowance of 5 per cent. for each of the two first dependent children and of 10 per cent. for each in addition up to 6 inclusive (1).

It should be noted that the above provisions have a wide application since they are valid equally for industrial workers as for farm hands, and the cultivator is enabled to enjoy all the benefits whether he works on his own account or on the account of a third party.

BRAZIL. — In connection with the new social policy which has been actively pursued in Brazil in the last ten years and in particular since the establishment of the National Council of Labour, the question of rural housing has been under careful consideration by the Federal Government and by some of the principal States of the Federation. It is clear that since Brazil is a country which attracts immigration and also requires foreign labour for the full utilisation of its agricultural wealth the housing conditions of workers have an essential importance for colonisation and for the populating of its very extensive territory. But naturally, in view of the great size of the country and the extreme variety of the natural conditions as well as of the economic and social, the rural housing situation is very different from State to State, and within any one State from region to region. On general lines it may be said that the housing for the rural population is quite satisfactory in the Southern States, which are the ones preferred by foreign settlers. Here there are to be found *fazendas* or large farms with houses built on sound and hygienic lines. Many "settlement nuclei" are completely organised as far as regards public and private buildings and the services of collective interest. The programme for the extension of the network of roads (*estradas de rodagem*), to the execution of which full attention is given by the Federal and State authorities has undoubtedly contributed to bring about the improvement mentioned. But in the States of Northern and Central Brazil the situation is not so satisfactory, since properly built houses are not yet generally to be found. The authorities are however now in agreement in the sense of adopting energetic measures for the gradual substitution of the primitive structures by dwellings more suitable to the progress which is being made by Brazilian agriculture, a progress which is unquestionably furthered by the recent monetary stabilisation.

CZECHOSLOVAKIA. — The question of rural housing is attracting the special attention of the public authorities and of scientific institutions. Among the numerous efforts which have been made to throw light upon and to solve this problem, mention may be made of the movement for adopting a general scheme for construction or reconstruction of farm dwellings from the point of view of rationalisation and hygiene, a tendency which is also to be found in the work of the advisory ser-

(1) To facilitate the realisation of its objects, by the Law of 5 October 1928 the Société Nationale was empowered to issue a loan on the nominal share capital of 300 million francs. Of the net proceeds of this loan a sum of 100,000,000 francs was to be exclusively devoted to the campaign against insanitary housing, by means of the construction of houses and dwellings of the simplest possible type, and on a model as compact as the rules of hygiene allow, the whole being carried out on lines which make possible in the first place the pulling down of the bad houses which are beyond the possibility of repair and the clearing out of those which are overcrowded.

vices for agriculture. The Czechoslovakian " Musée de l'Agriculture " has among other institutions undertaken to enquire into the question of the planning of rural dwellings, and has inaugurated a competition for designs of fittings which will be simple, hygienic and likely to meet the needs of rural families.

Farm workers' housing conditions are treated in detail in the important publication of the Czechoslovakian Academy of Agriculture entitled " Work and Wages of Farm workers in Czechoslovakia " (1), which has been prepared on the basis of a special enquiry undertaken by the Academy. Taking the data as supplied in this publication, to every 100 independent farmers there are 73.6 members of the family taking part in the work of the farm, while the labour from outside sources is represented by 107.3, of which 51.8 are farm servants, 53.9 are day labourers and the remaining are 1.6.

As regards the housing, the *deputátníci*, that is to say, workers who receive their wages in kind, have the right in Bohemia to a room including annexes with an area of at least 12 square metres per household and two square metres per child. If the *deputátník* has his own house, he has the right to an indemnity calculated according to rent charges. In Moravia and in Silesia, the *deputátníci* have the right to one living room, a kitchen and a small storeroom or pantry (*komora*), including annexes, or to an annual sum of Kc. 240. If there is no living room, the *deputátník* will receive in compensation 30 per cent. of the rent agreed upon ; if there is no pantry, the compensation will be 20 per cent., and if there is no woodyard, it will be 10 per cent. The dwelling must meet all hygienic requirements and the area of the living room must be at least 12 square metres. In Slovakia all that is specified is that there shall be suitable lodging for the *deputátníci*, meeting all hygienic requirements. According to the replies to the enquiries made by the Czechoslovakian Academy of Agriculture, the housing conditions of permanent rural workers are classed as follows : from 85.4 to 98.6 per cent. satisfactory, from 10.4 to 14.6 per cent. poor. No really noticeable difference is to be found among the different groups of permanent labour. It is possible to state that housing conditions are more favourable in the western districts than in the east ; in Ruthenia they are on a lower level.

Speaking generally, the housing conditions of rural labourers in Czechoslovakia vary according to the different countries and districts. A deterioration is noticeable as one passes from west to east. Thus, in Bohemia, unmarried farm servants are lodged under satisfactory conditions, except in some parts of this country. Housing conditions for married servants are still better. For each family independent accommodation is provided, including one or two rooms, more usually only one room, the proportion of one room to two room accommodation being 67 to 32. Three dwellings had three rooms. In most cases there were annexes provided. On the large farms, the *deputátníci* are almost always lodged in buildings belonging to the employer, but they all have independent accommodation, also including one or two rooms, but the proportion of the two room accommodation is higher than in the case of the peasant farm holdings.

In Moravia, although housing conditions of permanent rural labour are somewhat inferior to those of Bohemia, there is a higher percentage of two room accommodation among married farm servants, *viz.*, 73.1. This higher percentage is especially characteristic of the sugar beet regions where three room dwellings are not infrequent.

(1) J. U. Dr. Otakar FRANKENBERGER : Pracovní a mzdové poměry zemědělského dělnictva y republice Československé. Prague, 1928.

In Slovakia the housing conditions of rural labour are not on the whole satisfactory especially as regards the quality of the accommodation.

Taking it all round, the housing conditions of seasonal labour are much inferior to those of permanent labour. For the most part the workers are lodged in common, or barracked, in quarters without any annexes.

In the countries known as historic countries, that is to say Bohemia, Moravia and Silesia, these job labourers have as a rule suitable quarters, and the majority have their own houses.

In Slovakia, housing conditions of job labourers do not reach the level of those of the historic countries; owing to the migratory character of the farm workers in Slovakia, the index figure representing their housing conditions is lower than that applicable to workers working and living in one and the same place.

For Ruthenia no single case of suitable quarters for job labourers has been reported.

ENGLAND AND WALES. — The problem in England and Wales is mainly that of housing the farm labourers' class, the large and small farmer being usually reasonably well provided for. The typical unit is the "cottage" which with its garden and pig-stye is generally to be found in the groups which constitute a "village". In certain districts unmarried labourers live in the farmhouse, but this is not a universal practice.

After the war and with the increase of population, the general problem of housing became acute in England, but as England is not predominantly an agricultural country attention was primarily concentrated on urban housing. In 1926 the Housing (Rural Workers) Act was passed, and came into operation in 1927. The previous housing legislation, *viz.*, the Housing of the Working Classes Acts of 1885 and of 1890, as well as the Housing and Town Planning Act of 1909 had only been partially applicable to rural areas.

The conditions of rural housing had from the middle of last century been recognised as calling for serious consideration. It remained, however for certain reports of the County Medical Officers of Health, based on careful investigation and published from 1911 onwards in accordance with the provisions of the Act of 1909, to supply exact and ample evidence that while a fairly large proportion of rural cottages might be said to be fit for habitation, a larger proportion were defective, either so as to admit of repair or adaptation, or so as to be actually unfit for habitation and incapable of repair. The main defects were: bad repair of roof, or walls, damp flooring, absence of any or any adequate sanitation, insufficient sleeping accommodation for the sexes, defective lighting, ventilation, etc. (1).

It thus became clear that while some building of new cottages was essential, much could be done by the more economical plan of the so-called "re-conditioning", which in addition has the advantage of preserving what is regarded as among the special beauties of the English countryside, the old style cottage in the English village.

It was in accordance with considerations and facts of this nature that the Housing (Rural Workers) Act of 1926 was passed authorising grants or loans to owners, either directly or through the local authorities, for re-conditioning existing dwellings

(1) SAVAGE, William C.: Rural Housing. London, 1919.

or buildings suitable for adaptation as dwellings. Grants may be made up to two-thirds of the estimate cost, provided that such cost is not less than £50, with a maximum grant of £100. For loans, a maximum is fixed at the rate of 90 per cent. of the value of the property. An owner, who is in England only rarely the occupier, can obtain a loan supplementary to the grant made to him, and in this way may even be in a position to put the reconditioning in hand without incurring any initial expense. Grants and loans may be made for works of structural alteration, repair, addition (e. g. of the third bedroom now generally insisted on), the provision of water supply, drainage, sanitation, etc.

The conditions attached to these grants or loans are : that the houses will be occupied by agricultural workers or persons receiving similar wages ; that the rent for a period of 20 years will be maintained at the normal agricultural rent (increased by three per cent on the owner's share in the cost of the works as estimated).

The Ministry of Health issued two circulars, in January 1927 and January 1928, giving full instructions and advice to local authorities, and also arranged for the circulation of a Housing Manual on Design, Construction and Repair of Building.

Up to 31 December 1928 the number of applications made for grants on the basis of this Act was 2,070. The sums granted up to that date amounted to more than £100,000 (1).

In addition the Agricultural Credits Act of 1928 includes regulations in respect of advances made by the new Agricultural Mortgage Corporation, for the purpose of improvements, including the buildings of new cottages, so far as these appear to be necessary adjuncts to the farm as a whole.

It may be added that in connection with the transfer of miners' families from the distressed areas to rural areas (2), special grants are made from other funds, in addition to the subsidies under the Housing Acts, for the erection of new houses. It has been found that a house can be erected (in wood or ferro-concrete) which will satisfy the required standards, within a week of the preparation of the site, at a cost of £ 161 ; this to include living room, three bedrooms, scullery and larder, with range (in living room), washing copper and coal bunker, outdoor separate earth closet. This is a type of house generally to be recommended and adaptable with slight modifications to varying requirements of site, etc.

It is to be noted that the National Farmers' Union, the representative organisation of the farming classes in England and Wales, has for many years past urged the amendment of the earlier Housing Acts, with the object of providing greater facilities for the erection of cottages at lower rents for farm workers.

As regards the attitude of the different political parties in Great Britain to the question, all parties are now agreed in encouraging the provision of more and improved housing in rural areas: the Act of 1926 was passed by the late Conservative Government, the Labour Party lay stress on provision of " untied " cottages (i. e., cottages not attached to any special farm but available for any worker), also on the extension of all means for betterment of rural life, while the Liberal Party has long urged the formation of a permanent Rural Housing Board. It will be remembered that the 1926 Act is due to expire in 1931 (3).

(1) Under the Act of 1926, 1700 cottages have been reconditioned.

(2) See: Coalfields Distress: New Houses for Transferred Miners. *The Social Service Review*, No. 3, London, March 1929.

(3) In view of post-war industrial developments, it is now recognised as advisable to consider also the demand for houses in rural areas of persons employed in industrial occupations. This evidently affects the problem of providing houses for workers employed in agriculture.

FINLAND. — From an enquiry made in 1901 (1) it appeared that more than 60 per cent. of the inhabitants of rural communes lived in houses of one or two rooms ; 602,237 persons (28 per cent. of the total rural population) were in houses containing only one room, and 575,034 (or 26,5 per cent.) in two-roomed dwellings, that is to say, with one room and a kitchen ; other 184,969 persons (8,5 per cent.) had no house of their own, but lodged in houses belonging to other persons. Subsequently the situation improved in the sense that the percentage of the one-roomed houses fell from 65.7 in 1901 to 40 in 1919. None the less the housing conditions remained in general far from satisfactory.

Government intervention on the matter is thus considered essential. From 1900 the State has endeavoured to assist agricultural workers to build themselves houses, by means of loans varying from 200 to 1000 marks, at an interest of 4 and a half per cent., repayable from over a period of 10 to 15 years. In addition, in the period from 1920 to 1925, the Government made special grants, for a sum of 13.5 million marks, expressly earmarked for improvement of rural housing conditions.

FRANCE. — The housing conditions of agricultural workers are a subject of serious concern in France, and are moreover regarded as among the reasons for the instability of alien labour in agriculture, as causing dissatisfaction among the alien agricultural workers whose engagement in French agriculture is a necessity in view of the difficulty of obtaining French workers for this industry.

The problem of rural building has been discussed at various congresses : at the Congress of the *Fédération nationale des travailleurs de la terre* (1920) ; at the Congress of French agriculture at Nancy (1922), at Rouen (1925), at Chartres (14 December 1925) at the meeting of the *Fédération des Associations Agricoles du Centre*, where the advisability of standardisation of buildings in the country was unreservedly urged, on the grounds of the speeding up of building operations and of reducing the net cost. The ninth General Congress of French Agriculture, which met at Strassburg in 1927 resolved to bring to the notice of Parliament the need for passing an Act to suppress certain existing abuses relating to rural accomodation and rural sleeping quarters. The question was also discussed at the XIVth. Congress of Agricultural Syndicates held at Pau from 1 to 3 March 1929 (2).

The question has been and is the subject of careful attention in France on the part of the National Council of Labour Supply (*Conseil National de la main-d'œuvre*), an official organisation. A resolution having been submitted recently to the Permanent Committee of this Council containing a request that discussion with a view to legislation should be expedited in the Senate, a sub-committee was appointed to examine the question. In its report this sub-committee makes the following statement : " Workers' housing conditions, either definitely below standard or merely too primitive, are beyond question among the most potent causes of the rural exodus ".

(1) FINLAND : The country, its people and institutions. Helsingfors, 1926.

(2) See : The Sleeping Accommodation of Agricultural Labourers in France, *International Review of Agricultural Economics*, No. 3, 1921.

The Housing of Agricultural Workers in France. *International Labour Review*, No. 6, Geneva, December 1928.

— De la création d'habitations à bon marche dans les communes rurales ou de la réforme du logement rural. Rapport présenté à la Société d'Agriculture, de Commerce et de l'Industrie du Var dans la séance extraordinaire du 30 juin 1923 par M. Astier. Office Départemental Agricole du Var, 1923.

— Ministère de l'Agriculture. Service de la main-d'œuvre et de l'immigration agricole : Les questions agricoles au Conseil National de la main-d'œuvre (session de 1926-27). Paris, 1928.

On 28 March 1927 the National Council of Labour Supply adopted an important resolution requesting the Government to take all possible steps to give legislative force to :

A. The following proposals, which are inspired by the Recommendation of the International Labour Conference of Geneva, 1921, concerning the living in conditions of agricultural workers ;

(a) To take statutory or other measures to regulate the living in conditions of agricultural workers with due regard to the special national climatic or other conditions affecting agricultural work, after consultation with the employers' and workers' organisations concerned if such organisations exist.

(b) Such measures shall apply to all accommodation provided by employers for housing their workers either individually, or in groups, or with their families, whether the accommodation is provided in the houses of such employers or in buildings placed by them at the workers' disposal.

(c) Such measures shall contain the following provisions :

1. — Unless climatic conditions render heating superfluous the accommodation intended for workers' families, groups of workers, or individual workers should contain rooms which can be heated.

2. — Accommodation intended for groups of workers shall provide a separate bed for each worker, shall afford facilities for ensuring personal cleanliness, and shall provide for the separation of the sexes. In the case of families, adequate provision shall be made for the children.

3. — Stables, cowhouses, and open sheds shall not be used for sleeping quarters, unless such sleeping quarters in stables, cowhouses and open sheds fulfil the conditions laid down in paragraphs 1 and 2 and are provided with means of outside ventilation and natural lighting.

B. Practical measures designed to give actuality to the above proposals, such practical means to be sought in the sphere of moral and pecuniary stimulus, in taxation relief, and in credit facilities.

C. Instructions authorising the Agricultural Credit Funds to issue to rural proprietors long term individual loans for the purpose of aiding in the construction, alteration, improvement, or transformation of buildings destined for the accommodation of agricultural workers.

D. The Council recommends agricultural societies to undertake, in consultation with the administrative authorities concerned with agriculture, a propaganda campaign among farmers to encourage them to make such improvements to their buildings as are immediately practicable.

It may be noted that two Acts, the Act of 5 August 1920 on Agricultural Credit and Co-operation, and that of 5 December 1922 on Cheap Housing and Small-holdings also encourage the construction or reconstruction of rural housing in general.

The Law introduced by M. Loucheur and passed on 13 July 1928, which lays down a programme for the construction of cheap houses and dwellings with a view to remedying the housing shortage in France, will contribute in a marked degree to the solution of the problem. This Law does not alter the essential principles of the existing legislation relating to cheap housing, but merely extends its scope (1).

This Act makes provision for the construction or transformation of 260,000 dwellings (of which number 200,000 are to be cheap and 60,000 medium-rent dwell-

(1) See : New Housing Legislation in France. *Industrial and Labour Information*, Vol XXVII, No. 11, Geneva, 10 September 1928.

ings) over a period of five years. The Act particularly stipulates that a third of the credits voted for the execution of this programme is to be reserved to rural districts. Financial assistance is to take the form of loans at low interest up to 40 or 50 per cent. of the value of the buildings in the case of new buildings, and up to a maximum of 25,000 francs in the case of restoration, sanitary improvements or transformation of buildings already existing. Non-recoverable grants, ranging from 5,000 to 15,000 francs per dwelling, may be made to large families, disabled soldiers, war widows and workers incapacitated as a result of their occupation.

These new provisions apply equally to the dwellings of agricultural workers and farmers and smallholders without large resources who work alone or with one labourer and also to dwellings with an adjoining workshop for an artisan family. The rural programme has thus been covered satisfactorily by the Law.

Special mention should be made of the Law of 31 July 1929, since it is expressly intended for the improvement of the housing and living in conditions of farm workers (1). This law enacts that regulations made by the public administration within 18 months after the passing of the law shall lay down for each agricultural area, and if possible, for each type of farm, the general hygienic conditions to which the accommodation of wage-earners on the farms must conform especially in regard to cubic air space, ventilation, lighting, sleeping and washing arrangements, etc. These regulations will include measures for the abolition of the practice whereby those in charge of the animals at night sleep side by side with them in the stables or cowsheds, and also for ensuring provision of separate accommodation for the sexes and of separate beds for each person. All measures prescribed by these regulations shall be carried into effect within one year for farms of more than 100 hectares of cultivable land and pasturage, and within two years for the farms of from 50 to 100 hectares, and within three years for farms of less than 50 hectares of cultivable land and pasturage. Agricultural credit banks are empowered to grant to rural landowners individual long term loans for the purpose of facilitating the restoration, sanitary improvement, or transformation of buildings intended for housing farm workers. The total of these loans may not exceed 100,000 francs for one and the same farm. These loans are repayable by annual instalments within a maximum period of 25 years. The rate of interest must be less by one and a half per cent. than the discount rate of the Bank of France.

GERMANY. — It is fully recognised that timely attention to the housing conditions of the landworker is a very important means of raising the sense of wellbeing and satisfaction in work of workers and of reducing the rural exodus, and accordingly endeavours are being made by the *Reich* and by single States to support and promote the movement for reconditioning of and improvement of rural dwellings.

In the following statement only those measures will be detailed which serve to encourage the building of dwellings for agricultural workers. It is not possible here to enter into the subject of the other measures, loans in aid, subsidies, etc., the object of which is either the encouragement of housebuilding in general or the promotion of land settlement schemes.

In regard to the housing of agricultural workers, a distinction is to be made between houses built by the employer for his own workers (*Werkwohnungen*), houses built by the workers themselves (*Eigenheime*) and rented dwellings. The separate

(1) *Journal Officiel de la République Française*, N^o. 181, Paris, 3 Août 1929.

States and the Reich have given their support to the construction of all three types but have especially encouraged the construction of *Eigenheime*.

At the time of the passing of the Settlement Law of 1886, powers were given for the carrying into effect of workers' settlements under the legal form of the *Rentengut*, with the aid of the general funds available as credit for land settlement. It became the proper function of the public utility land settlement associations to arrange for the settlement of land workers as part of the large scale scheme of settlement. The authorities had to be satisfied that the associations were performing this part of their duties before granting settlement credit, i. e. intermediate credit, *Landesrentenbank* credit, mortgage credit granted out of funds accruing from the tax on existing house property (*Hauszinssteuerhypothek*). From the reports of the public utility settlement enterprises it is clear that there has been an increase in many districts in the workers' *Rentengüter*.

Since 1920 the resources of other funds have been applied to the building of houses built by the workers themselves or for them by the employer. In the first place mention should be made of the financing of building in connection with the productive schemes for rehabilitation of the unemployed. From resources available loans without interest are made on an average of 5000 RM per *Werkwohnung* and of 7000 RM per *Eigenheim*. Loans for the former purpose are repayable within 15 years, those for the latter within 30 years. In Prussia these credits are negotiated by the Chambers of Agriculture or by the provincial Housing Associations (*Wohnungsfürsorgegesellschaften*), the essential condition being that the size of the dwelling must be at least 60 square metres. From 1921 to 1 July 1929 (1) in Prussia assistance was given by amortisation loans from the resources of the productive schemes for rehabilitation of the unemployed to 21,794 *Werkwohnungen*, 19,740 *Eigenheime*, in all 41,534 landworkers' dwellings. For the financial year 1930, 50 millions RM. are to be earmarked out of the unemployment funds for promotion of the building of landworkers' houses. The proportion of the *Eigenheime* has greatly increased in the last few years, so that in Prussia 41 per cent. in 1923-24, 63 per cent. in 1926 and 80 per cent. in 1928 of the dwellings built were *Eigenheime*. In addition to higher encouragement loans, the *Eigenheime* enjoy still wider privileges. When the *Eigenheim* is regarded as a homestead (*Heimstatt*) and thus comes under the *Reichsheimstättengesetz* of 1920, the owner on taking up a first mortgage (which must be negotiated on the private money market) may make application for the grant of interest quotas which will be granted by the Reich towards the lowering, over a period of three years, of the yearly interest charges, leaving only three per cent. chargeable on the landworker. The condition of granting these interest quotas is that the applicant possesses at least one quarter of an hectare of land as owned property, intends to live on this land and to keep it in good order. If in addition to his own house a rented dwelling is erected on the land, a *Hauszinssteuerhypothek* may be allowed.

Since 1929 equipment credits are granted by the Reich and by Prussia for workers, holdings, some credits being very small or loans without interest and in any case only repayable after a given period in yearly instalments. These credits vary in amount. The equipment credit given by the Reich may be granted to settlers only in the case where the holding has been formed with the help of the *Reichsiedlungscredit* and the value of the cultivable area per holding must not exceed the total amount of 4,000 RM, or 500 RM the hectare.

(1) Förderung des Landarbeiterwohnungsbaues. Arch. f. Innenkolonisation, Bd. XXI, 1929, Heft II. S. 427.

It should be mentioned in conclusion that the erection of workers' dwellings is being greatly facilitated by the technical advice available at the Building Departments which are attached to the Chambers of Agriculture or to the unofficial agricultural organisations, and also by the similar advice to be obtained from the Housing Associations (*Wohnungsfürsorgegesellschaften*).

ITALY. — In connection with the efforts made for the improvement of the economic and social conditions of the agricultural classes, the Italian Government has given close attention to the problem of rural buildings. With the object of encouraging home colonisation and the subdivision of the larger estates into suitable cultivation units, a Commission was appointed in October 1920 under the then Ministry of Agriculture with the duty of examining the question of rural building under its different aspects, technical, hygienic, moral and financial. This Commission, with the object of drawing up a preliminary programme of measures, formulated a series of resolutions (1) which may be summarised as follows.

1. — that all agricultural credit institutions, established under special laws, in Latium, in the southern provinces and in the islands of Sicily and Sardinia, are authorised to grant loans for the construction of rural buildings, farm roads and roads linking up farms etc., as well as for supply of drinking water, in all cases to be adequate to the requirements of the farms,

2. — that to any person who, in Latium, in the Southern provinces and the Islands may erect new rural buildings, even if with the help of a special loan, there shall be paid a contribution at the rate of 20 per cent on the actual cost of construction,

3. — that the same contribution shall be paid to any person doing the same with his own funds in all other provinces of the Kingdom;

4. — that a similar contribution shall be paid to any person who in any part of the Kingdom provides out of his own resources for the reconstruction or thorough transformation of buildings either actually uninhabitable or not in a condition complying with the requirements of hygiene,

5. — all such contributions will be paid half when the work is completed and half when the buildings are shown to be effectively used for farming purposes,

6. — that regional prize competitions shall be announced for studies in types of rural buildings

The various measures which have been passed in the last few years are partly based on these resolutions (2). These however are not as a rule contained in laws referring exclusively to rural buildings, but as in other countries in texts relating mainly to the erection of cheap dwellings and too numerous for it to be possible to give a full list.

In substance the measures in favour of rural buildings are of three kinds. (a) those relating to exemption from taxes, (b) those relating to granting of loans and to State contributions towards payment of interest, (c) those relating to State contributions towards the expenditure, this latter in accordance with the Law of

(1) Studio di provvedimenti atti a favorire la costruzione di case coloniche. Relazione dell'apposita Commissione a S. E. il Ministro per l'Agricoltura. *Nuovi Annali del Ministero per l'Agricoltura*, N. 1, Roma, June 1921.

(2) TASSINARI Prof. Giuseppe. Esame delle disposizioni di legge per favorire la costruzione di fabbricati rurali. Federazione Italiana dei Consorzi Agrari. Piacenza, 1923.

FONTANA Attilio. L'edilizia rurale nelle provvidenze legislative. *Il Monitore Tecnico*, official organ of the *Federazione Nazionale Tecnici Agricoli Fascisti* Nos 2-3, Rome, 31 January-15 February 1929.

16 June 1927, No. 1042 (provisions for encouraging the carrying out of certain minor agricultural improvements intended to increase cereal cultivation) in zones where increase of cereal cultivation and in general of food crops is necessarily dependent on such improvements, and at a rate not greater than 20 per cent. in favour of the owners of small or medium sized holdings, or of holders in emphyteusis and or persons farming such lands.

In the budget of the Ministry of National Economy for the financial year 1929-1930 the sum of 2,250,000 liras is set aside as a State contribution towards the payment of the interest on loans for the construction of farm dwellings and rural buildings in application of the law of 20 August 1921, No. 1177, and of the Royal Decrees of 5 April 1925, No. 438, and of 11 September 1925, No. 1733.

The operations of credit institutes at present empowered to make loans of this kind amounted in 1928 (for the past seven years) to a sum of little short of 100 million liras, with an annual contribution in interest, on the part of the State, of over 1,800,000 liras.

The measure, however, calculated to ensure the more systematic and far reaching development of rural building is undoubtedly the measure for the comprehensive land improvement (*bonifica integrale*) of the national territory (Law of 24 December 1928, No. 3134). The object of this measure is to intensify, in view of the increase in population, up to a maximum the agricultural production and to counteract the urban drift; accordingly all steps are taken to establish new centres of life in the country districts, and large sums are set aside as State contributions for the carrying into effect of an important series of improvement works (1) among which are the construction of village centres and of isolated rural buildings. The State aid for the expenditure involved in this section of the work may vary between 10 to 30 per cent. of the cost, and a total of 300 million liras is to be set aside in 30 annual instalments. The requirements of rural building in connection with this extensive and elaborate scheme for utilisation to the full of the lands of Italy are admittedly considerable. It constitutes one of the most important parts of the whole general scheme of land improvement, representing as it does a fundamental aspect of the problem.

There have been lately many signs of increasing recognition of the importance of the problem in Italy. Two in particular may be mentioned:

(a) the national competition announced by the General Confederation of Fascist Agriculturists in all provinces of the Kingdom of the rural dwelling house (*casa colonica*) divided into the following classes: — 1. the best kept farm house; 2. the adaptation and enlargement of farm dwellings and rural buildings, 3. erection of new farm houses and rural buildings; 4. existing farm dwellings.

(b) the enquiry made by the *Istituto Nazionale di Economia Agraria*, already mentioned, into the development of rural buildings in the various regions of Italy, results for Emilia, Romagna, Venetia, the Marches, Umbria, Abruzzi and Sardinia being already published. The enquiry has been mainly directed towards the kind of building, studied from all points of view and with reference to all the effects that they may have on the economic and social structure in the agricultural areas (2).

(1) See: The General Scheme of Land Improvement in Italy. *International Review of Agriculture*, No. 4, April 1929, Rome, International Institute of Agriculture.

(2) In 1927 the National Federation of the Fascist Syndicates of Agriculture, with the object of giving an exact account of the causes which determine and may influence the phenomenon of the urban drift, addressed to its subordinate organisations a questionnaire on rural housing and on the living conditions of agricultural workers; with regard to the housing the object was to ascertain as closely as possible the solidity, hygienic conditions, comfort and general amenities of the dwelling houses of the country districts.

It may be added that certain special agricultural credit institutions had set aside sums for the purpose of distribution as loans for building of farm houses.

There must also be remembered the benefit of the contribution made by the State in the proportion of 2.5 per cent., to the payment of the interest on loans for improvements, as specified in the Royal Decree-Law of 29 July 1927, No. 1509, on agricultural credit, such improvements to include also the construction of rural dwellings. This contribution has been raised to 3.5 per cent. for the operation of the general scheme of land improvement which is being carried out over large tracts of the provinces of Ferrara, Rovigo, Modena, Bologna and Ravenna (1). This contribution will be of great assistance in connection with the project which has been outlined for those zones of transforming large numbers of the ordinary labourers into share tenants, attached to the land by a produce-sharing agreement, a project which involves the necessity for the construction of small houses which are already being put up in large numbers in certain districts (2).

NETHERLANDS. — In regard to rural housing, attention may be called to the law of 1901, although not limited in application to country districts, on unhealthy dwellings (*Woningwet*). This measure contains instructions as regards hygienic conditions, and also provides financial aid on the part of the State or the communes for cheap dwellings. The results obtained on the basis of this legislation are more important for the urban than for the rural centres. A measure passed on 20 April 1918 (*Landarbeiderswet*) however has reference only to rural areas (3). Its object is the general improvement of the situation of agricultural workers, and it provides for offering them facilities for obtaining on specially favourable terms, the ownership of a plot of land and a dwelling house. Persons benefiting pay for 45 years a payment inclusive of the amortisation and the interest, fixed at five per cent. per annum.

The worker cannot be called upon to pay, as first instalment, more than 10 per cent. of the purchase price of the land and house standing on it. On the remainder of the debt he pays 4 per cent. interest; after the third year, the interest is raised to 5.75 per cent. From a recent enquiry made into the results of this law it appeared that the number of applications for purchase of small holdings with houses is much larger than the applications to rent small farm holdings without housing accommodation, such renting being also contemplated in the measure referred to.

NEW ZEALAND. — Since in New Zealand timber is the cheapest material, almost all farm dwellings are of wood, roofed with corrugated iron (4). Of recent years the bungalow has been the predominant type erected, i. e., a house with the characteristic verandahs, the kitchen being often placed in one part of a verandah while the remaining parts are used as sitting or additional bed rooms. But it is seldom that a rural home has any pretensions to external beauty or architectural attractiveness.

(1) In the development of rural building in the Roman Campagna (Agro Romano) see: "L'Agro Romano nel primo quinquennio fascista. Relazione sull'incremento del bonificamento agrario e della colonizzazione nell'Agro Romano dal 1° gennaio 1923 al 31 dicembre 1927". Ministry of National Economy, Rome, 1928-VII°.

(2) Very large numbers of these houses have for example been built in the province of Ravenna; they consist of two rooms and kitchen and the cost varies round 21 or 22 thousand liras.

(3) See: *International Yearbook of Agricultural Legislation*, 1918 (p. 876). Rome, International Institute of Agriculture.

(4) See: BELSHAW Prof. H. D.: *Some Aspects of the Country Life Problem in New Zealand. International Review of Agriculture*, No. 4, 1929.

There is of course much variation in style and degree of convenience. The tin or wooden "shack" of the pioneer is small and often lacking in elementary convenience. At the other end of the scale, the "house" of the large station owner leaves little to be desired. The dwelling of the family farmer may lack the refinement and convenience of middle class dwellings in the towns, but would in most cases compare favourably with those of urban artisans.

The typical farmhouse in an established district may have five or more rooms of comfortable size, a bathroom and a wash-house. A large number are lighted by electricity or home generated gas. It is becoming increasingly common for rural areas to be supplied with electric power which is used both for lighting and for driving milking plants and other standing machinery.

The above description applies generally also to Australia where similar conditions prevail, but as distances in Australia are of course much greater, in the districts remote from the urban centres the standard of housing, etc., is often rather lower.

POLAND. — As the greater part of the provinces of Poland were devastated by the world war, it became essential during the first years after the war to provide dwellings for persons left homeless, without giving much attention to details of construction. It is only lately that it has been possible to devote consideration to the question of housing.

A Decree of the President of the Republic of 16 February 1928 contains a series of regulations as to building bye-laws (Journal Officiel, No. 23, 5 March 1928).

The special rules relating to buildings in rural districts prescribe *inter alia*: that the height from floor to ceiling must be at least 2 metres and a half. The windows must be constructed so as to open. The total window surface must be at least one-tenth of the floor surface. The flooring in buildings intended for habitation must be at least 40 cm., above the soil level.

Owners of houses must keep them clean and in good condition. The buildings must not from negligence form a source of danger to the public or to individuals, or be unhealthy in character.

SPAIN. — The rural housing is satisfactory in the East and in Catalonia but is far from being so in Central Spain. The important land drainage reform, initiated by the Royal Decrees of 5 March 1926 is intended to effect a great improvement in this respect also (1). By this measure there are established corporate bodies, known as "Confederations of Irrigation Syndicates", with powers under State supervision and with State aid, of carrying out a complete scheme on economic lines of storage and utilisation of water, laying out irrigated fields, industries and villages in the various catchment basins organised so as to be independent economic units. This scheme will give full scope for home colonisation, as it will be necessary to bring into existence inhabited centres and villages for the workmen and peasants engaged on the works. In view of this scheme the Government is acquiring large estates which are being distributed in allotments to cultivators who are paying for them over a period of 25 years, the Government also advancing money for the building of settlers' houses.

SWEDEN. — In the course of the last twenty years, in connection with the increase in population and the consequent necessity of intensifying the agricultural yield

(1) See: Irrigation in Spain: A New Type of Institution *International Review of Agricultural Economics*, No. 3, 1926. Rome, International Institute of Agriculture.

to meet the growing consumption demands, a widespread movement has been going on in the country for establishing small farm holdings and for building houses for individual families. The Government has intervened to encourage the movement by means of certain measures the principal one being an enactment (1904) for the institution of a special State loan fund, by means of which persons without property can obtain on low interest and with amortisation over a considerable period, the ownership of a dwelling house. This fund in 1928 amounted to 170 million crowns. Loans were granted either for the establishment of a small agricultural holding, or up to three quarters of the estimated value of the building, for the construction of a building intended for habitation, the value of this not to exceed 10,000 crowns (1).

From 1905 to 1927 the loans thus granted made practicable the formation of 50,000 family properties, including about 19,000 house properties. The annual amount of the loans at present is 18 million crowns.

SWITZERLAND. — According to information supplied by the Division of Agriculture of the Federal Department of the Public Economy of Switzerland, it may be said in general that in this country the housing situation in regard to rural families is not unsatisfactory. In certain of the high alp districts it is not altogether good. Accordingly the Commission, appointed by the Federal Council to examine the Baumberger motion in reference to the steps to be taken to remedy the tendency for population to leave the mountain districts, proposed in its report that the Federal Government should further the measures taken by the cantons with a view to the improvement of the housing conditions in the mountain village, by the allocation of subsidies equivalent to the loans made by the cantons. The question is that of extending to dwellings in the mountain villages the allocation of Federal subsidies which have up to the present been granted only for the erection of chalets on the pasturages.

In addition the Federal Government grants annual subsidies to the public utility societies generally engaged in the work of country life betterment.

It will not of course be forgotten that, as already mentioned, the Union of Swiss Peasants established some time ago a Rural Buildings Office which advises farmers and drafts plans for the construction of healthy and appropriate buildings. This Office possesses Building Departments in different parts of the country (2).

UNITED STATES OF AMERICA. — In regard to the question of the rural dwelling which is an integral part of the movement so widespread in America for the improvement of rural life, the prevailing tendency has been to assume that the farmer should provide for his own dwelling house and for the housing of his tenant. In this respect there is of course a difference noticeable between the Northern and the Southern States. There is no existing measure which imposes one type of rural dwelling rather than another; there is still very generally to be found the building of purely temporary character, the so-called "shack". The last census re-

(1) *L'œuvre sociale en Suède. Aperçu public par ordre du Gouvernement suédois.* Stockholm, 1928.

The Swedish Agricultural Labourer. Published by order of the Swedish Government's Delegation for International Collaboration in Social Politics. Stockholm, 1921.

(2) See: *L'Union suisse des paysans: sa création, son organisation, son activité, ses succès.* Brugg, 1920.

Dreissgater Jahresbericht des leitenden Ausschusses des schweizerischen Bauernverbandes und des schweizerischen Bauernsekretariates, 1927. *Mitteilungen des schweizerischen Bauernsekretariates*, No. 89, Brugg, 1928.

ported that 7 per cent. of the farmhouses had gas or electric lighting, and that 10 per cent. had water piped in, while 38 per cent. had telephones. In certain favoured situations the percentage was higher. In New England, for example, 48 per cent. of the farms had water piped in, and nearly 25 per cent. of the farms in New York, New Jersey and Pennsylvania enjoyed the same advantage. In Massachusetts 28 per cent. of the farms were equipped with gas or electric light. In Utah, where many farmers live in villages after the European manner, 43 per cent. of the farmers' homes had gas or electric lights and in California 26 per cent. As regards telephone installation, the percentage of farms equipped reached 86 per cent. in Iowa, 78 in Kansas, 76 in Nebraska, 73 in Illinois, 66 in Indiana and 62 in Minnesota and Missouri. It is evident from these figures that farmers take advantage of improved household facilities when the opportunity exists.

W. M. Jardine, Secretary of Agriculture, in his general report, which serves as an introduction to the Yearbook of Agriculture for 1928, observes that "the architecture of the farmhouse needs study. Houses built to fit farm wants need not lack either beauty or convenience. Part of the money provided for the farm home should be set aside for shrubbery and other adornments. It should be easy to plant the lesson of beauty in the minds and hearts of rural young people, so that when they become farmers their desires will not be limited to the attainment of economic security, but will include also the provision of beauty and harmony in the home and its surroundings. Instruction given to the young people of the farm in house decoration will return its cost a thousandfold. It should be emphasised, however, that the problem is not merely to transplant to the farm what has already been worked out by the city, but rather to adapt improved appliances to the special needs of the farm home" (1).

Legislative measures have been discussed on housing in rural areas, with special reference to farm tenant houses, and "apparently the day is not far distant when public opinion will justify the attempt to enact minimum standards for tenant houses in respect to number of rooms, floor space, cubic air space and window space, sanitary conditions and accessibility to well water" (2).

URUGUAY. - The problem of the housing of agricultural workers has for some time past engaged the attention of the authorities; some years ago the Government presented to Parliament a bill for the benefit of the rural classes making it obligatory for owners of farm undertakings to provide accommodation of proper hygienic standard and sufficient for the whole of the staff engaged, whether permanently or temporarily, on the farm work.

The measure was partly intended to attach the farm worker to the land, by giving him a convenient dwelling within easy reach of his work, and partly to prevent the rural workers from collecting in the town centres and passing over to other industries, where the surplus labour might later cause class conflict.

By *resolución* of 17 August 1926 there was also instituted a special prize given by the Minister of Industries for the type of rural dwelling adapted for agricultural settlements (3).

G. C.

(1) Yearbook of Agriculture 1928, United States Department of Agriculture, Washington 1929, p. 46.

(2) GALPIN, C. J.: The Country Life Movement in the United States. *International Review of Agricultural Economics*, No. 3, 1923, p. 303.

(3) The International Yearbook of Agricultural Legislation prepared by the International Institute of Agriculture, gives under a special heading the most important provisions enacted in respect of rural building. In recent years there have thus appeared the measures for Greece (1919), for Austria (1922), for

The Country Women's Association Movement in Various Countries.

The following is the first part of an account of farm and country women's associations in different countries, based strictly on replies and documentation received in response to an enquiry made in January 1930 by the International Institute of Agriculture. It will be seen that though these associations and their Federations are characterised by a certain similarity, there are variations in the development of the movement in accordance with the conditions and problems of the national life of the various countries. There is everywhere evidence of the growing recognition of the importance of the contribution which can be made by the woman to the economic and social life of rural areas, as also of the necessity for brightening her individual life and giving her that wider outlook and fuller power of adaptation which will enable her best to meet the demands of her exacting vocation.

In each part the countries are given in alphabetical order. It is proposed to include in subsequent parts Canada, Czechoslovakia, Denmark, Finland, Germany, Irish Free State, United States of America and others. A list will be added of all the leading Federations with addresses of headquarters.

FRANCE. — There are in France a very large number of country or farm women's associations dealing with the vocational and household interests of the woman in the country. The origin of these is due mainly to private initiative in each case; they exist apart from State control or State aid and are not even strictly speaking federated under a central organisation, and consequently figures of membership are not available. There does however exist a *Union Centrale des Associations Rurales Féminines* under which the associations are virtually grouped. This Union has supplied the information for the statement here made. In principle, the agricultural syndicates or unions of farm employers and employed in France are open to women as well as men; in practice however only women farmers who are heads of families belong to these unions. During the last two years, the regional Unions of these Syndicates have been endeavouring to establish a central organisation of women's institutions dealing more particularly with the vocational and household interests of the woman in the country. The *Union du Sud-Est*, with headquarters at Lyons and with a sphere of influence extending over ten departments, has for many years done much to promote farm household management instruction; it has established Farm women's Associations (*Associations de Fermières*), ten being established during the past year, and has just formed an *Association féminine agricole*, membership of which is open to any and all women who are in any way connected with the calling of agriculture. Similar action has been taken by the Unions of Finistère and of the Côtes-du-Nord in Brittany, and it is expected that in the near future there will be a women's centre of rural institutions connected with all the regional Unions.

Activities. — The object of all the associations is to give a thorough training to the woman in the country. The means usually adopted is the development of all stages of household management instruction: instruction by correspondence, which is admirably organised in certain regions; the *Semaines Rurales*, a type of

Finland (1925), for England (1926), for Uruguay (1926), for Poland (1927), for Russia (1927), for France (1929), etc. In the same Yearbook there are also reproduced the provisions relating to agricultural credit, land settlement, land improvement, small holdings, agrarian reform, etc., which frequently contain provisions encouraging the erection of dwellings and of rural buildings in general.

meeting similar to the conferences held by the Belgian Farm Women's Clubs but specially intended for girls; and other types of instruction. The associations receive no subsidy or official encouragement of any kind, although the Government has established travelling schools of a very useful character.

Publications. — Every Regional Union of the *Syndicats agricoles* publishes a bulletin frequently containing a woman's page or supplement.

The Union du Sud-Est publishes "La Femme à la campagne" which is specially intended for farm women; the "Revue des Agriculteurs de France" publishes quarterly a woman's supplement; in addition there is *Ar Vro Goz*, the journal of the Finistère Union, and *France Rurale* published at Lyons.

Another monthly illustrated review dealing with all questions of household management is "Mon chez Moi".

GREAT BRITAIN. — The foundation of Women's Institutes, the name given to associations of country women in England, dates from 1915, when it was realised to be essential to promote combined effort among the women in rural areas with special reference at the time to food production and preservation. Advantage was taken of the experience already gained in the Dominion of Canada where since 1897 a movement had gone on in the different provinces for banding together the country women in the isolated districts for mutual support, social intercourse and interchange of ideas. The project for Women's Institutes in England and Wales was laid before the Agricultural Organisation Society which gave it cordial support and undertook the necessary work in connection with the new organisation. In 1917 there were 137 Institutes in existence in the rural districts of England and Wales, and a National Federation was formed in that year. During the years 1915 to 1919 a grant was made by the Board of Agriculture, and for part of that time the Board also undertook the propaganda work in connection with the Institutes as being of national value. Later however it was considered advisable that the Federation should be selfsupporting and should itself undertake the formation of new Institutes. By June 1929, there were 4,321 Women's Institutes in existence.

In addition to the monthly meetings of each Institute which are a feature of the organisation, each Institute holds its own Annual General Meeting, when its officers are elected, the accounts and report adopted and delegates are appointed alike to the National Federation Annual General Meeting and to the County Federation Council which must meet at least twice a year.

The policy laid down at the Annual General Meeting of the National Federation is carried out by an Executive Committee of not more than 25 members, of which 17 are elected by the Federation, three members are appointed by the Ministry of Agriculture, one by the Board of Education and one by the Ministry of Health, and in addition three members are co-opted by Committee itself. By this means the work of the Federation is kept in touch with general and official opinion. It is represented on the National Council of Social Service, and on a number of organisations concerned with rural betterment and social or educational activities.

The National Federation is an affiliated member of the International Commission of Agriculture, and was represented at the XIVth International Congress of Agriculture held at Bucarest in June 1929.

Activities. — Each Institute is a non-political, non-sectarian and democratic association of country women of all classes in a given rural district. The primary activity of each Institute is the holding of a monthly meeting at a convenient time on a fixed day, such meetings to be partly instructive and partly recreative in character, the members so far as possible themselves contributing educational

or recreative elements. The programme for the meetings of any Institute is arranged in accordance with the wishes of the members and usually for six months or a year in advance. The range of activities is very varied and includes lectures, discussions, demonstrations or courses in various kinds *e. g.* of home handicrafts, preparation and production of plays, concerts, competitions and exhibitions. Particular stress is laid on the advantages of informal discussion, and on the co-operation of members in the various activities, according to individual tastes and capacities. On the other hand every monthly meeting is in part a business meeting and is strictly conducted in this respect. The improvement of life in the villages is, generally speaking, one of the main objects of the whole organisation, and with this object opportunity is given for obtaining information on and discussion of all practical details, such as rural housing, water supply, rural telephones, rural libraries, educational facilities of different kinds. The formulation of any definite policy on these subjects is however rather the work of the County Federations or of the National Federation than of the separate Institutes, whose members are merely encouraged to take an intelligent view of the problems while appointing delegates to deal with them. The federation has indubitably shown itself able to influence public opinion, and even the course of legislation, on matters that concern country women, and in this way, as well as by the work done in raising the social and educational level of family life in the rural districts, it has become a valuable feature of English national life.

The history of the movement in Scotland is similar; the idea originated in a Report made to the Scottish Board of Education in 1912. No action was however taken till 1917 when the Board of Agriculture in Scotland was approached and beginning of organisation made. A constitution was adopted in 1920 rendering each Institute self-governing with the right of electing delegates to biennial conferences held in each of five areas. These conferences elect members of Area Committees which administer funds and encourage activities in their Area. A central Council is elected from these Committees. In 1922 the Board ceased to direct the organisation which has proceeded on the above lines as an entirely self-governing body since that time.

HUNGARY. — Although farm women's associations as such are not yet in existence in Hungary, a movement is now in progress for their formation and is being energetically fostered by the *Faluszövetség* (National Federation of Villages), an important modern organisation for the improvement of the standard of life of the rural population. Actually there are already from about 25 to 30 women's associations with a small membership which are concerned with the vocational and household interests of the country woman. These associations are linked for the most part either with the *Magyar Katolikus Nőegyesületek Országos Szövetsége* (Women's Catholic League of Hungary) or with the corresponding Protestant Women's Federation in Budapest, both being mainly urban in character. The object in view is the development from the economic and social standpoint of the status of the woman in the rural districts. Practical four year courses are arranged in some cases for girls from country districts in home nursing, dressmaking, laundry and household management, while the national songs, dances and embroidery also form part of the instruction or recreation provided. The activities also include lectures, courses, social gatherings for older women. The work so far accomplished has been built up by private initiative, but the movement is now becoming part of the activities of the *Faluszövetség* which was largely responsible for the organisa-

tion of the IIIrd International Congress for Rural Life Betterment held at Budapest in June 1929.

POLAND. — The organisation of farm women in present day Poland has a particularly vigorous character. It falls into three well defined groups. (a) In the western provinces of the former Kingdom, there were formed as far back as 1895, the *Ziemianki*, associations of women landholders (*propriétaires foncières*), which are thus the earliest societies of the kind existing in Europe. These societies had an important role in the history of the country, but up to 1920-21 their membership did not exceed 15,000. Since that date their activities have become wider in scope, and membership is now about 30,000. (b) To meet the needs of the more backward rural areas of Eastern Poland and of those districts of Central Poland, where the *Zemianki* have not been established, "*Cercles de Ménagères Rurales*" have been organised by the Farm Women's Section of a large central society for rural organisations (*Centralne Towarzystwo Organizacji i kółek rolniczych*). The total membership of these is now about 24,000. (c) In addition similar bodies have been set up by the Chambers of Agriculture of Posen, Cracow, Silesia, and Volhynia, the respective membership being given as 5300, 1250, 1000 and 400.

All the above, including the more historic *Ziemianki*, are now grouped under the "*Conseil Central de l'enseignement ménager féminin*" which also groups the urban associations of the same kind and the household management high schools. The primary object of the whole movement, as now existing, is the development of women's work in the family and household and of the general position of woman in society.

Activities. Social gatherings are arranged by the associations, and are often attended in large numbers. Considerable stress is laid on the educational side of the work of all the organisations; courses are arranged in domestic subjects, including many branches of peculiarly artistic handiwork, and exhibitions and competitions are encouraged. Women advisors in poultry keeping, gardening, household management and hygiene give lectures and visit villages and farmhouses throughout Poland. Correspondence courses in household management are also carried on.

Valuable work is also carried on for the girls and younger women in the country by various organisations of the youth of Poland, including the Association Catholique de la Jeunesse Polonaise (*Section Féminine*) of which the following details are supplied: membership (for 1928) about 80,000; lectures, dramatic performances and recreative gathering are arranged and attended in large numbers; clubs are formed for religious purposes also for physical education, for choral and orchestral music, etc.; savings banks and libraries are organised, and exhibitions and broadcasting talks are arranged. Special attention is given to competitions in maize and sugar beet growing and in poultry rearing, and the preparation of the young people for farm life and activities is never lost sight of. Members of these more juvenile associations usually pass on to membership of the women's organisations already described.

Finance. — The associations are in all cases the result of private initiative, but are encouraged by the Government subsidie., made either directly or through federating organisations.

Publications. — Among the reviews published may be mentioned the *Przodownica* which appears twice monthly and has a circulation of 20,000; the *Zemianka*, and the *Organizacja Gospodarstwa Domowego* (*L'organisation du ménage domestique*), illustrated, which appear monthly with a circulation in each case of 2,000.

For the juvenile associations, the review with the largest circulation is the *Młoda Polka* (La Jeune Polonaise) of which 35,000 copies are printed weekly.

UNION OF SOUTH AFRICA. — Three separate organisations of country women's associations are now in existence in the Union of South Africa: the Women's Section of the Transvaal Agricultural Union, established in 1925; the Women's Institute of Natal, Zululand and East Griqualand, formed in 1928, and the Cape Province Women's Agricultural Association, established in October 1929. In the Transvaal there are now 126 branches of the Women's Section with approximately 3,000 members; in Natal, Zululand and East Griqualand there are 27 branches with about 1,000 members, while the newly formed Cape Province Association has already 50 branches with 1,610 members. At present the three organisations are not grouped into a South African Federation, but it is hoped to federate within the next year or so when the Provincial organisations are firmly established. It is anticipated also that during that period the project will have matured for the organisation on similar lines of the forty or more Country Women's Associations which are included in the Agricultural Union of the province of the Orange Free State.

The objects of each of the organisations are similar, and the following particulars of that of the Transvaal, the earliest of the three, will in many respects apply generally.

The constitution of the Women's Section of the Transvaal Agricultural Union is bilingual, the membership embracing Dutch and English country women. The object of the organisation is to enable women to take an effective part in rural life and development. The Women's Section accordingly has power: (a) to form women's branches in the province; (b) to establish co-operation amongst women; (c) to make provision for the fuller education of women in all branches of agriculture, handicrafts, domestic science, hygiene and social welfare; (d) to formulate the general principles governing the branches; (e) to raise funds, obtain grants, subscriptions and loans from State, municipal, local and other bodies or from individuals, and to receive legacies and other benefits, and to apply such funds solely to the above objects, (f) to co-operate with other societies of women in the Transvaal province and elsewhere.

All the three organisations were established by private initiative. The State Department of Agriculture assists by providing an organised service of lecturers and demonstrators on agriculture and home economics. The Land and Agricultural Bank of South Africa has recently given small grants in aid.

Mention may also be made of the existence of a similar organisation in Rhodesia, the Women's Institutes of Southern Rhodesia.

Activities. — So far as possible monthly meetings of each Branch are arranged with programmes on similar lines to those indicated for the Women's Institutes of England and Wales, although naturally planned with reference to the requirements and interests of rural life in South Africa. The importance of the contribution made by the woman to farm life and activities is possibly even greater in the new countries than in Europe, and it is at any rate significant that in South Africa the movement has been closely linked from the first with the Agricultural Unions of the provinces, which take so prominent a position in the economic life of the country.

The women's organisations have no separate journals or publications, but instead all use as their official organ "The South African Farmer (Die Suidafrikaanse Boer)" which is published weekly in Pretoria.

C. H.

(To be continued).

LAND SYSTEMS

Land Values and Agricultural Wealth of Spain.

Spanish statistics in regard to crops and live stock give a complete idea of the general position ; they may however be supplemented by some account, although a summary one, of the conditions of climate and soil and the position of crops and of stock-breeding in the different regions of Spain, which will make it possible to form a more definite idea of the agricultural wealth of Spain.

In the 18th century the agricultural wealth of Spain was valued at an amount equivalent to five thousand million pesetas , since then there has been a continuous rise in the amounts at which it was estimated, with a single interruption only in the rear 1880 in consequence of the phylloxera invasion, and in the year 1920 the whole agricultural wealth was valued at 50,000,000,000 pesetas, *i. e.* in little more than a century the value had increased ten times. In the 20th century new vistas are opening as to land values. Mechanical science and chemistry are giving a great impulse to arable farming, not merely by increasing the yields, but also by making possible the remunerative farming of lands which had formerly been considered of inferior quality. The index of productivity is thus modified by the use of agricultural machinery and chemical fertilisers and the true value appears of lands the value of which had formerly been obscured by ineffective and unprogressive farming. This advance in land values ceased during the Great War, but was soon resumed. The reason for this was that in 1918, as a result of the exchange and of the business excitement prevailing in Spain where as a neutral country there was an accumulation of money, land values experienced an abrupt rise which culminated in the period 1919-1921, when the value of the rural property of Spain rose to one hundred thousand million pesetas. At the end of this period, after the adjustment of the national economic situation, the value of land property was stabilised at a normal figure which according to the official statistics may be placed at ninety thousand million pesetas (1).

The advance which in a few years — 1910 to the present date — raised the value of property from fifty to ninety thousand million pesetas is intrinsically applicable to capital in land, which is undoubtedly backward in Spain in comparison with the world balance account of sale and purchase. This backwardness is not to be attributed solely to the effects of tariff protection, nor to inadequate exportation of agricultural and stock-breeding products, but also to an unprogressive agriculture resulting in a unit yield lower than that which might be hoped from the index of productivity of the respective zones of a country well suited for agriculture by the conditions of its climate and soil.

As part of the general reorientation which was a result of the great war, there may be mentioned a partial gain which markedly affected agriculture : the recognition of the importance of arable farming and its products, and as corollary the rise in the values of lands farmed which, once the situation was normalised, might be calculated as 50 per cent. higher than the pre-war prices. This rise took place with slight fluctuations in all regions and proves indisputably the plus value of Spanish rural property as a consequence of the war.

(1) In this article the official figures supplied by the *Servicio Agrónómico Nacional* are followed.

A number of factors enter into the value of agricultural property. Considering the land as it is in itself, *i. e.*, apart from modern improvements, etc., one of the most important of the factors in the determination of unit prices — of course after the natural fertility of the soil which is the prime determinant of value — is regularity in production. As such regularity in Spain appears to be intimately connected with the presence of water, the value of a farm thus depends largely on the greater or less abundance of the water supply, as tending to eliminate the risk of loss of crops and to ensure a regularity in the annual production. This is illustrated by the high price quoted for land on the Cantabrian and North-east coast and in all those districts where highland areas are available for farming, such as some areas of the provinces of Leon, Burgos and Soria in the zone of transition between the dry lands of Old Castile and the region of the Cantabrian slopes with the abundant precipitations which make it a zone of farmland and pasturage. Here irrigated farms of the first class are valued at as much as 30,000 to 40,000 pesetas the hectare, those of lower category are in proportion lower, but any land which can enter into the crop rotation is worth 5,000 to 6,000 pesetas the hectare. The reason of this lies in the fact that with four hectares of land of this kind and a house a family of farm workers can be assured of a stable livelihood due to the productivity of the soil. The three zones into which the Navarre plateau is divided afford another example. the dry lands are from 300 to 400 pesetas the hectare, and the cereal growing lands go up to 6,000 pesetas the hectare. In the province of Murcia in the lowland portion, it is of interest to note that for first class land on the estates supplied with water 10,000 pesetas is paid per hectare and that this value decreases as the water supply diminishes till 400 pesetas per hectare is quoted as the maximum for dry land. It is established by these instances that the crop risk and the regularity of securing the annual production have a decisive influence on the value of land, making the prices either very high or very low according as it is a question of irrigated or wet lands on the one hand and dry lands with or without pasturage possibilities on the other.

The parcelling of land as a system of tenure is another factor which increases its value, by bringing about the ready made formation of a nucleus of small holders, owners for the most part, for whom the parcelled plot represents the regular work which ensures the livelihood of the family throughout the year. That this system of tenure increases land values is proved by practice, as there are numerous instances in which enterprising agents or Companies formed for the purpose have bought large estates at a fixed total sum, for resale after parcelling of the parcels on the market, and thus in five years time double the purchase price of the estate. In such cases the parcelled property is finally entered in the Land Register with a raised price considerably above the normal purchase price. The value of the property is also determined by the abundance or scarcity in any given region of estates of the same class or type of cultivation. In Western Andalusia, the areas lying on either side of the Guadalquivir form an instance in point. While on the right bank, on a Miocene formation of ridges, there are many thousands of hectares of land of first rate quality for cereal growing, on the right bank where the soil is poor, there is a quantity of woodland and a scarcity of cultivable land. Notwithstanding, the price is almost the same in spite of the fact that the yield of the lands on the left bank is more than double that on the poorer lands. Austere habits of life and the practice of saving gives in some regions of the peninsula a purchasing power which strengthens the natural desire to possess land in ownership, and the result of this demand for land is the disparity between the price the purchaser is ready to pay and its revenue value. Other important factors may influence the

value of land, such as its position, accessibility, means of communication, industry of the population, its degree of cultivation, availability of working capital and so on according to the different circumstances.

The above recognition of the factors which mainly influence the value of rural property may be followed by a survey of some of the lands of the different Spanish territories so as to understand the unit prices which at the present time are quoted for them.

Lands in Spain may be regarded as divided into two large groups. dry and irrigated. The dry land, or the characteristic land of Spain, consisting of lands which are given up to the production of cereals and leguminous crops, may be divided again into two groups: the lands of the winter vegetative cycle and those which can also be cultivated during the summer. It is in part of Castile, in Upper Aragon, in the province of Toledo and in Lower Estremadura that the best of the Spanish cereal growing lands are to be found, lands producing large quantities of wheat, the prices of which vary between 5,000 and 6,000 pesetas the hectare; there are also extensive areas of good lands which are valued at 1,500 to 2,000 pesetas the hectare in the two Castiles and in Andalusia, and finally there is much fertile land well distributed throughout the peninsula which hardly commands the price of 500 pesetas the hectare, owing to the fact that the buyer has not the means to pay more and the price cannot be maintained. Summer cereal crops are grown on all the wet lands of the zone of the Pyrenees and wherever the natural humidity of the soil makes it possible to carry on this cultivation during the summer. Prices of these lands vary from 3,000 to 4,000 pesetas the hectare, when the previously mentioned factors take effect.

Vine growing (the vineyards being almost entirely replanted with American stocks) is diffused throughout nearly all parts of the peninsula and, generally speaking, is carried on on those lands that owing to their quality or to prevailing meteorological conditions cannot be cultivated in any more remunerative way. In some zones however the production has been improved, and wines are obtained the renown and the ready sale of which influences the price of the vineyard from which they come. The reference is here to the Andalusian and Rioja wines, to those of the Priorato, Panades and Tarragona, those of Aragon and Alicante, which owing to the great demand have put up the price of the land producing them to 10,000 pesetas the hectare. Apart from these cases, it is practically obligatory to use these lands for vine growing as they are useless otherwise and the price paid per hectare is rarely more than 2,500 pesetas a hectare. Lands devoted to the cultivation of table grapes are quoted at good prices, from 6,000 to 8,000 pesetas the hectare. In the provinces of Almería and Murcia a much prized variety called *Ohanes* is grown and is freely exported, a fact which has raised the price of the vineyard to 40,000 pesetas.

It is generally known that Spain makes the largest contribution to the world production of olives and olive oil and that in a year when the olive trees bear well the crop figures are equal to the world average yield. The most productive zone is in Andalusia, mainly in Jaen, and next in Cordoba and Seville. In the first of these, olive trees cost from 60 to 100 pesetas which represent values of from 8,000 to 10,000 pesetas per hectare; in some parts of the province of Cordoba these prices are reached but in others the price per hectare is only 2,500 pesetas. In Seville, speaking generally, the quality of the soil is less good from the point of view of olive cultivation and the ruling prices fluctuate between 3000 and 4000 pesetas the hectare. In the rest of Andalusia this crop is not of importance. In the deep ravine of the Ebro, there is an olive zone where the price of land is from 6,000

to 8,000 pesetas per hectare, but this price is due not so much to the quality of the soil as to the high quotation reached in consequence of the land being submitted to an excellent co-operative marketing organisation. Apart from these regions described, olive cultivation is much diffused throughout the whole of Spain, but outside the characteristic olive region land values are lower.

The estates employed as stockbreeding farms are usually under a mixed farming system; where the soil makes it possible cereal and leguminous crops are grown, the rest being given up to pastures or to oak woods for swine feeding. The larger farms are met with in Estremadura and Salamanca forming estates of easy access commanding prices up to 3,000 pesetas per hectare. In Andalusia and Catalonia stock farms do not reach such prices, as the acidity of the soil diminishes its quoted value to 1,500 pesetas per hectare. In Aragon and in the central tablelands of Old and New Castile, the price of the hectare is quoted at 800 pesetas because the soil is poor and the pastures can support only sheep and goats.

Among irrigated cultivations, the values of land under market gardening are according to position; near Barcelona horticultural products which may supply the markets of that city raise the prices of the land on which they are grown to 25,000 pesetas per hectare. In Valencia, these prices are reached for market gardening land in consequence of the climate and the great demand for these products. In Andalusia there are zones of market gardening where the price is 20,000 pesetas per hectare, such as some districts of Granada; and in other districts of Cadiz the price does not rise above 10,000 pesetas. These values indicated for Valencian and Andalusian market gardening are mainly buyers' prices secured by the land in consequence of the excellent marketing possibilities of the products of the tropical crops. When the value of these products reaches a climax as on the banana lands of the Canary Islands where there is an abundant water supply, then the value of the hectare reaches 150,000 pesetas.

In this brief examination of the market value of Spanish lands, although not specially mentioned, are included certain types of cultivation of special provinces such as textile crops, fruit trees, sugar beet and some tobacco and cotton cultivation, all of which are comprised in the large zones of dry land and irrigated land previously described.

At the beginning of this article it was stated that the official statistics value Spanish agricultural land at a figure of about 90,000,000,000 pesetas. It is possible to give the income of the total wealth as shown in the following table representing the market value which according to the *Servicio Agronómico Nacional* of the produce obtained from the 46 million hectares under cultivation in Spain:

Produce of	Value in million pesetas
Cereal and leguminous crops	4,500
Vineyards	702
Oliveyards	650
Vegetable growing	610
Fruit trees	446
Industrial crops	207
Root crops, tubers, etc.	860
Grasslands, forage crops	457
Special cultivations	35
Woodland and rough pasture	645

That is to say that if from nine thousand million pesetas — taking the approximate total of the above figures — there is subtracted 4,500,000,000 as representing, according to the unanimous opinion of farmers, cultivation costs, a net yield of 4,500,000,000 pesetas is obtained, which if capitalised at a moderate interest, 5 per cent., gives for rural property in Spain a value of 90,000,000,000 pesetas.

A word more on the live stock wealth to complete the data which at the beginning of this article were claimed to make it possible to form an opinion of the value of Spanish agriculture.

Stockbreeding in Spain which has in the last 25 years made very considerable progress represents a high value in the national economy as a whole. There are now 4,000,000 head of milch cows and the dairy qualities of these are being improved by selection. In pig breeding there are 5,000,000 head of swine and there is a progressive increase every year. Although sheep farming has somewhat declined there are at the present time 20,000,000 head; in respect of the world industry Spain stands fifth. As regards goat farming which is on the increase Spain stands in the first rank of countries with a census of five million goats. Merino sheep, Andalusian horses, Murcian goats have a world renown and equally world renowned are the fighting bulls, both for their importance and for their legendary interest. The annual revenue to which this live stock wealth is estimated amounts according to official statistics to 3,500,000,000 pesetas.

This sum added to the nine thousand million representing the income from rural property amounts to more than twelve thousand million pesetas which is the official figure contributed by the labour of the Spanish countryside to the national economy.

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VASQUEZ Humasque, Ing. Agrónomo, Inspector del Banco Hipotecario Páginas Agrícolas de A. B. C., November 1929. Madrid.

FARM ECONOMICS

The Potato Growing Crisis in Scotland.

Potato growing is an important branch of agriculture in Scotland and lately the industry has been passing through a severe crisis due, it would seem, to over-production. If we take the whole of Great Britain and Northern Ireland, the production of potatoes in the past five years was as follows :

Quintals		Quintals	
1925	54,630,399	1928	57,895,678
1926	48,067,162	1929	59,612,000
1927	49,898,170		

The imports of potatoes in the same years were : •

	Quintals		Quintals
1925	4,998,269	1928	4,837,044
1926	3,442,461	1929	2,977,551
1927	2,962,548		

Potatoes are also exported from Great Britain and Northern Ireland. The exports in the past five years were :

	Quintals		Quintals
1925	439,244	1928	503,500
1926	527,045	1929	1,483,296
1927	827,098		

As will be seen, both imports and exports are small in comparison with home production, and it may fairly be said that the home market must absorb not only the whole of the potatoes produced in the country but a certain quantity of imported potatoes (largely early potatoes) as well. As the production fluctuates violently and the demand for potatoes is somewhat inelastic, there are inevitably violent fluctuations of price.

These fluctuations may be indicated by giving the index-numbers of wholesale prices of potatoes in England and Wales in the years 1925 to 1927 and in each month of 1928 and 1929. The base of the annual index is the annual average of the price in the years 1911 to 1913, and the base of the monthly indices is the average of the price in the corresponding months of the years 1911 to 1913. In determining the prices from which the indices are calculated, two typical varieties of potato are chosen.

Annual Indices of the Price of Potatoes.

1925	204	1926	151	1927	174
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Monthly Indices of the Price of Potatoes.

	1928	1929
January	174	131
February	171	129
March	182	140
April	194	115
May	220	97
June	225	66
July	137	96
August	135	102
September	160	112
October	151	117
November	153	118
December	145	110

As the average wholesale price in the years 1911-13 was £3 18s. 10d. per ton, it will be seen that very low prices prevailed in 1929, especially in June.

Potato-growers in all parts of Great Britain have suffered from the fall in prices and the British United Potato Marketing Board has been formed, consisting of eight potato-growers (four of whom are to be appointed by the National Farmers' Union of England and Wales, one by the Scottish National Farmers' Union and one by the Scottish Chamber of Agriculture), six potato-merchants, three retailers, two agricultural workers, one representative of "allied trades", two consumers and one scientist. The principal aims of this Board are to promote the grading of potatoes, to conduct an extensive advertising campaign and to take steps to meet foreign competition.

It is, however, the Scottish potato-growers who are most seriously affected and in Scotland a proposal has been put forward jointly by the Scottish Agricultural Organisation Society and the Scottish National Farmers' Union to form a selling agency, to be called The Scottish Potato Growers, Ltd. The Agency would be of the Nature of a "pool", the growers being asked to enter into an agreement to supply to the agency for three years the potatoes grown on a certain acreage. The potatoes would be sold by grade and variety and the price of each grade and variety would be averaged.

This scheme was discussed and approved at a Conference held in Edinburgh early in January. A speaker at the Conference made a striking statement in which he attributed the potato growers' difficulties to the advance of agricultural science. Three things, he said, made any improvement in the situation of the potato growers very difficult. They were now growing potatoes on scientific lines, both as regards manuring and seed selection, with the result that the crop had been steadily increasing and might still increase. Apart from imported early potatoes, growers were producing large crops of potatoes at a much earlier date than in by-gone years, with the result that new home-grown potatoes came on the market much earlier. Sometimes blight occurred to help them and he had heard many farmers say that the crop that paid them best was the one when there was potato disease in the country. But they could now combat disease successfully and their only chance of obtaining a paying price was when they had a cold season in which the whole growth was checked and they got a small crop.

Attention is being directed to methods of disposing of the surplus potatoes. They can be used for feeding pigs and dairy cows, their value as a feeding stuff being estimated at about £2 per ton. They can be used for the manufacture of alcohol, potato starch or acetic acid, but it is calculated that in all three cases the manufacturer could not pay more than £1 per ton for the potatoes. They can be dried, five tons of potatoes producing one ton of dried material. The feeding value of dried potatoes is about £8 5s. per ton, so that, allowing for the cost of drying (about £1 5s. per ton of potatoes), the grower would obtain about £7 for five tons of potatoes, and from this price deductions would have to be made for transport costs. Another way of utilising potatoes is to make potato silage, and investigations into a method practised in Holland are being made at the Agricultural Institute, Kirton, Lincolnshire

J. K. M.

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The Extension of Cereal Cultivation in Switzerland.

On 5 December 1926, the Swiss people rejected the bill for making definitive the grain monopoly which has been in force for 14 years. As the result of this measure, the Federal Grain Administration (*Régie Fédérale des Blés*) had succeeded in protecting the Swiss markets against the influences of speculation, and in making the most systematic provision possible for the bread supply in a continental country without seaboard and with sown areas that were at the beginning of the war inadequate to its requirements.

Cereal cultivation, if exposed to the competition of imported products, would have gradually given place to grasslands and pasturelands. The Federal Assembly, undeterred by the setback of 5 December 1926, drafted a counterproposal into which monopoly did not enter, and the Swiss people accepted it on 3 March 1929. According to this proposal the Confederation undertook to take over grain from growers at a price of at least 8.50 francs per 100 kg. of breadstuff cereal more than the market price, and also to allow growers a milling premium of 5 to 8 francs according to the altitude. The proposal includes, besides, measures intended to develop to the fullest the cultivation of cereals. Up to 3 March, the Federal Administration delivered cereals at the mill free of transport charges; on that date, it obtained power to reimburse the transport costs, which enabled it to establish a uniform price of bread for all Switzerland. It is however estimated that the expenditure necessitated by the new scheme will amount to from 12 to 14 million francs yearly. The Federal Bank will continue to pay, as in the past, the four millions allocated for the milling premium; as to the ten millions remaining, it has been decided to cover this sum by raising from two to five centimes the statistical due which the Swiss customs impose on imported merchandise.

Once confident of marketing its grain harvest each year at remunerative price, the peasant could henceforth think of increasing the area of sown land. By the growing of more cereals, the Swiss dairy crisis was in part met; Switzerland imports large quantities of wheat and the surplus production of butter and cheese presses heavily on its fluid milk market.

The prices of Swiss butter are determined by foreign competition. The cost of production in Switzerland is higher than in the neighbouring countries a fact which is accounted for by the high costs of labour and of all farm requisites. The producer earns from milk transformed into butter 4 to 5 cents less than from milk intended for cheesemaking. It was this fact which decided the Federal Council, in the course of the summer of 1929, to increase import duty on foreign butter.

In their anxiety to export the stocks of cheese which were constantly accumulating, the Swiss Union of Cheese Dealers lowered its selling prices, and brought them down to the level of the prices asked by their foreign competitors. But these in their turn reduced their prices in the same proportion, and on 1 November 1929, the Swiss Union of Milk Producers found itself obliged to reduce the price of milk by 2 centimes the kilogramme. This decision when made effective still further aggravated the crisis of Swiss agriculture. During the two years when the milk prices were maintained at 24 centimes, a Swiss peasant farmer after paying the in-

terest on his debts and reckoning a wage for himself and his family at the level of a farm servant's, was left without any interest on his own capital.

The Secretariate of the Swiss Peasants' Union thereupon published a brochure in which a study was made of the grain problem. It was considered that the area set aside for the cultivation of cereals in Switzerland could be increased by 10,000 hectares and that a satisfactory return would be ensured by State protection. The country would produce 350 carloads of cheese less every year; this reduction, which is insignificant compared with the total production, would have a favourable effect on the prices of cheese and milk. In addition the extension of cereal growing would improve the balance of the farm economy, diminish the risks of production and render crises less acute, while the more economical provisioning of his household would leave the peasant farmer better off, and since cereal growing is the basis of any scientific system of cultivation, the farming return is also increased.

The objection might be made that the climate of certain regions of Switzerland, in consequence of very considerable precipitations, is not well adapted to cereal growing, and that labour is becoming more and more scarce. The Secretariate draws attention to the fact that, in localities where conditions seem to be disadvantageous, poor crops of bad seasons are balanced by the harvests in good seasons, that the effects of soil and climate can be counteracted to a certain degree by farming technique, and that the shortage of farm labour is compensated for by the systematic use of farm machinery.

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[The writer urges the consideration of social and economic problems as they affect the consuming public, and deprecates limitation of production as a virtual limitation of the wealth of the community].

MARANI (Dott. Claudio) : Credito agrario. Nuova Enciclopedia Agraria Italiana. Parte ottava. Turin, Unione Tip. Editrice Torinese 1929-VII.

[After a preliminary note on the historical development of agricultural credit, the theory is briefly expounded, followed by discussion of the nature and function of agricultural capital, its sources, and the forms it assumes together with the rate of interest and the guarantees attached to rural credit. The special question of international agricultural credit is also dwelt upon. A chapter is devoted to the organisation of credit in the different countries. In conclusion there is a full and systematic handling of the problem in regard to Italy, in the course of which the author very ably deals with the complicated question of the existence of the capital resources essential to the full restoration of Italian agriculture].

PROKES, Dr. Antonin, Advisor to the Ministry of Agriculture : Dispositions faites de la part de l'administration de l'Etat en faveur de l'agriculture tchécoslovaque pendant les dix années dernières. Prague, 1929, 17 pages, 25 tables.

[Review of the legal and administrative State measures which have been carried out in Czechoslovakia within the last ten years, with the object of the re-establishment of the pre-war position of agriculture and that of the promotion and economic and social development of agriculture in general. The author mentions all the most important measures which have been taken as regards agricultural education, the encouragement of the co-operative movement, regulation of wages conditions, protection of farm workers and small cultivators, regulation of water courses and of agricultural technique, methods of research, trials etc.].

THE MOVEMENT FOR A SOUNDER MONEY. The Stable Money Association, 104 Fifth Avenue, New York, 1929 54 pp. Price 50 c.

[The above Association was founded in 1928 and has obtained the support of a number of leading economists, statisticians and monetary experts both in the United States and elsewhere. The tractate contains excerpts from addresses and articles by officers of the Association and others interested in its objects, showing a striking consensus of opinion as to the serious economic and social evils that attend the present wide fluctuations in the general price level, and in regard to their preventability. The Association advocates the policy of stabilisation and gives publicity to plans proposed for this end though without committing itself to any specific method or plan. A chart of the annual level of prices from 1800 to 1927 in the United States based on the index-number of the level of wholesale prices of commodities of the United States Bureau of Labor Statistics is appended with a table of significant dates in monetary history].

AGRICULTURAL LEGISLATION

United States Legislation on Agricultural Marketing.

The various attempts at legislation for the relief of the American farmer, some account of which was given in a previous issue of the present Bulletin *, have finally borne fruit in the enactment last June of "The Agricultural Marketing Act". The text of this measure differs only very slightly from the bill introduced by the Mr. Haugen in the House of Representatives in the preceding month of April. Although Dr. Haugen's proposed short title "The Federal Farm Board Act" was rejected in favour of the title given above, the general title is identical with that adopted in the Bill. This fact is indicative of the practical identity of the text of the bill and that of the measure which, unlike previous projects at legislation, was fortunate in obtaining the approval of the President as well as of both Houses of Congresses. Inasmuch as a careful analysis of the bill was given in our previous article on farm relief legislation the present article must of necessity be to some extent a repetition. Since, however, the method adopted for our previous study was based on a comparison of Mr. Haugen's bill with that introduced simultaneously before the Senate by Mr. McNary — a document which, it may be added, is now of little more than historical importance — it may not be out of place here to give the reader a brief account of how the law on this point actually stands thus avoiding any unnecessary complication of the issue with measures which so far have remained at the stage of mere proposals. Some of the minor points of divergence between the Act and the parent bill will, however, be mentioned in passing.

The Act is described as "An Act to establish a Federal Farm Board to promote the effective merchandising of Agricultural commodities in interstate and foreign commerce and to place agriculture on a basis of economic equality with other

(*) Year 20, No. 6 (June 1929).

† The words italicised were not contained in the Bill.

industries". According to Section 1 (a) of the Act, Congress proposes to help agriculture to realize the equality (1) by minimizing speculation, (2) by preventing inefficient and wasteful methods of distribution and (3) by encouraging the organization of producers into effective associations or corporations under their own control for greater unity of effort in marketing and by promoting the establishment and financing of a farm marketing system of producer owned and producer controlled co-operative associations and other agencies and (4) by aiding in preventing and controlling surpluses in any agricultural commodity, through orderly production and distribution, so as to maintain advantageous domestic markets and prevent such surpluses from causing undue and excessive fluctuations or depressions in prices of the commodity" †. Sub-section b defines a surplus as "any seasonal or year's total surplus, produced in the United States and either local or national in extent, that is, in excess of the requirements for the orderly distribution of the agricultural commodity or in excess of the domestic requirements for such commodity".

The practical instrument for carrying out this policy is the Federal Farm Board set up in Section 2 of the Act. The connection between this Board and the general policy of the Act is explained in Subsection c of Section 1 of the Act according to which "The Federal Farm Board shall execute the powers vested in it by this Act in such manner as will, in the judgment of the board, aid to the fullest practical extent in carrying out the policy above declared".

The members of the Board are appointed by the President by and with the advice and consent of the Senate. It is to consist of eight members (instead of the six proposed in the Bill) in addition to the Secretary of Agriculture *ex officio*. The President is to "give due consideration to having the major agricultural commodities produced in the United States fairly represented on the Board". Rules are laid down for the periodical renewal of the Board differing slightly from those proposed in the Bill. The members who are paid a salary of \$12,000 a year, are to be citizens of the United States "and shall not actively engage in any other business, vocation or employment than that of serving as member of the Board". The Act further lays down "that no appointed member may during his term of office engage in the business (except such business as is necessary for the operation of his own farm or farms) of buying and selling or otherwise be financially interested in, any agricultural commodity or product thereof". The Act is more explicit on this point than the Bill which laid down merely that members should not "actively engage in any other business, vocation or employment than that of serving as member of the Board".

The Board is to be assisted by various "Advisory Commodity Committees" set up in pursuance of this Act. They are to be instituted on the basis of an invitation extended to the co-operative associations handling the particular commodity (Sec 3 (b)). An agricultural commodity is defined for the purposes of this Act as "any regional or market classification or type of any agricultural commodity which is so different in use or marketing methods from other such classifications or types as to require... treatment as a separate commodity". When two or more agricultural commodities are so related in use or marketing methods as to require joint treatment they may be treated as a single commodity. Each commodity advisory committee is to consist of "seven members, of whom two at least shall be experienced handlers or processors of the commodity". The duties of these committees are specified in subsection (d) of Section 3 of the Act. There was — it may be noted in passing — no clause in the Bill corresponding to this subsection. According to this subsection "Each advisory committee may by

itself or through its officers (1) confer directly with the board, call for information, or make oral or written representations to it, concerning matters within the jurisdiction of the board and relating to the agricultural commodity, and (2) co-operate with the board in advising the producers through their organizations or otherwise in the development of suitable programs of planting or breeding in order to secure the maximum benefits under this Act consistent with the policy declared in Section 1".

Turning to the Federal Farm Board we find that its powers are divided into "general" and "special". As regards the former it is to have its own offices, seal, staff, etc. and is to present an annual report to Congress (Sect. 4). As regards its special powers, the Board, is "authorized and directed" to "promote education in the principles and practices of co-operative marketing of agricultural commodities and food products derived thereof" and "to encourage the organization improvement in methods, and development of effective co-operative associations". It is to collect information and make reports as to "crop prices, experiences, prospects, supply and demand at home and abroad" and to investigate conditions of overproduction and *advise as to the prevention of such overproduction*. Among the subjects it is to study (Section 5, subsection 5) are the methods of expanding markets at home and abroad for agricultural commodities and food products and of developing by-products and new uses of these commodities and products.

The assistance which the Board is to give co-operative associations may also take the form of loans. The purposes for which these loans may be given are specified in Sec. 7. They include "the effective merchandising of agricultural commodities and food product thereof; the construction or acquisition by purchase or lease of physical marketing facilities for preparing, handling, storing, processing, or merchandising agricultural commodities or their food products; the formation of clearing house associations" and "enabling the co-operative association applying for the loan to advance to its members a greater share of the market price of the commodity delivered to the association than is practicable under other credit facilities". Loans are only granted under conditions calculated to guarantee their due repayment, and are made from a revolving fund of \$500,000,000, appropriated to the Board by Congress.

Perhaps the most interesting provision of the Act is that relating to the "stabilization corporations". The functions of these corporations which are set up for particular agricultural commodities may be gathered from Sec. 9 (b), which declares that "Any stabilization corporation for an agricultural commodity (1) may act as a marketing agency for its stockholders or members in preparing, handling, storing, processing and merchandising for their account any quantity of the agricultural commodity or its food products and (2) for the purpose of controlling any surplus in the commodity in furtherance of the policy declared in section 1, may prepare, purchase, handle, store, process, and merchandise, otherwise than for the account of its stockholders or members any quantity of the agricultural commodity or its foodproducts whether or not such commodity or products are acquired from its stockholders or members". A stabilization corporation will only be recognized by the Board if its establishment is or may be necessary in view of the marketing situation of the particular commodity, that the outstanding voting stock or membership interests are or may be owned only by co-operative associations handling the commodity and the corporation agrees to adopt such by-laws as the Board may require. The Board may make loans to stabilization corporations. The grant of these loans and the financial administration of the corporations are regulated far more fully in the Act than in the corresponding Bill.

Thus 75 % of its profits must be paid into a reserve fund and out the remainder there must be repaid all outstanding loans and interest. The money loaned to the corporation is to be used by it as a marketing agency or else to "enable the corporation to control any surplus in the commodity as herein before provided and for meeting, carrying and handling charges" etc. Stabilization corporations must maintain adequate reserve funds and any losses incurred by it must be paid from such reserves or from loans made to it by the Board. An important safeguard on the corporations' activities is constituted by the provision that "any stabilization corporation receiving loans under this subdivision for surplus control operations shall exert every reasonable effort to avoid losses and to secure profits, but shall not withhold any commodity from the domestic market if the prices have become unduly enhanced, resulting in distress to domestic consumers".

With sec. 10 of the Act which provides for setting up clearing house associations we come to less controversial ground. The functions of these producer controlled associations consist in "effecting the economic distribution of the agricultural commodity among the various markets" and in "minimizing waste and loss in the marketing of the commodity". The Board is to assist in forming such associations if "such assistance, in the judgment of the Board, will be in furtherance of the policy declared in section 1".

The succeeding section contains perhaps the most novel portion of the Act. This is the provision made in it for the insurance by the Board "of the co-operative associations against loss through price decline in the agricultural commodity handled by the associations and produced by the members thereof". The conditions under which the Board may exercise this power show clearly the limits which the legislature wished to place on this form of State assistance. According to sec. 11 the Board may enter into price insurance agreements with the co-operative societies "only if in the judgment of the Board (1) coverage is not available from private agencies at reasonable rates (2) the insurance will be in furtherance of the policy declared in section 1, (3) the agricultural commodity is regularly bought and sold in the markets in sufficient volume to establish a recognized basic price for the market grades of the commodity, and (4) there is available with respect to the commodity, such market information as will afford an accurate record of prevailing prices for the commodity, covering a period of years of sufficient length to serve as a basis to calculate the risk and fix the premium for the insurance".

Further sections of the Act contain measures for preventing the duplication by the Board of activities performed by other agencies, and for enabling the Board to obtain access to information collected by "governmental establishments". An interesting provision inserted in the Act which was not contained in the Bill authorizes the President (Sec. 13 (c) "to transfer to or retransfer from the jurisdiction and control of the board the whole or any part of (1) any office bureau service, division, commission, or board in the Executive branch of the Government engaged in scientific or extension work, or the furnishing of services with respect to the marketing of agricultural commodities". The Miscellaneous Provisions which bring the Act to a close lay down that the books and accounts of the Board are to be examined by the General Accounting Office, and introduce guarantees against the disclosure of information by the various associations and corporations or their members and against speculation in agricultural commodities by any member, officer or employee of the Federal Farm Board.

* * *

Source : An Act to establish a Federal Farm Board to promote the effective merchandising of agricultural commodities in interstate and foreign commerce, and to place agriculture on a basis of economic equality with other industries. [Public No. 10 — 71st Congress] (H. R. 1).

A. O. R.

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INTERNATIONAL REVIEW OF AGRICULTURE

PART II

MONTHLY BULLETIN

OF

AGRICULTURAL ECONOMICS AND SOCIOLOGY

LAND SYSTEMS

Official Enquiry on Land Values, Rents and Emphyteusis Charges in Brazil.

In the number of December 1929 of this Review a note was given on the principal results of the enquiry on agricultural wages in Brazil prepared by the *Serviço de Inspeção e Fomento Agrícolas* (1) under the direction of the Minister of Agriculture, Industry and Commerce, His Excellency Dr. Geminiano de Lyra Castro. Here a statement will be made of the fundamental data of another enquiry, carried out by the same Service, on land values and on rents and emphyteusis charges on lands in 1928. This enquiry not only provides very full information on the course of the land market the increasing activity of which reflects the advance in the exploitation of the natural resources of Brazil, but it also illustrates the agricultural situation of the separate States and provides valuable material for the comparison of the different regions. At the same time it presents an interesting survey of the various aspects of Brazilian rural economy and possibilities of development (2).

Amazonas. — In this State in the year under review no perceptible fluctuations in the prices of land were noted the prices being influenced by the current quotations of the chief products of the region, rubber and nuts. The forests of rubber (*seringaes*) are valued according to the number of the trees, and the general character of the stands, on which depends the greater or less facility for tapping the trees. The same holds good for the "nut estates" (*castanhaes*), those with a production lower than 200 hectolitres are as a rule less sought after while the others are for the most part quoted at from 5:000\$000 to 10:000\$000 (3) per 1000 hectolitres of the product.

Pará. — Nut estates, and stockraising lands (*campos de criação*) in the famous Marajó region, showed in 1928 increased values, by 20 and 30 per cent. respectively,

(1) The Chief of the Service is Dr. Arthur Torres Filho, member of the International Agricultural Scientific Council of the International Institute of Agriculture.

(2) An idea of the extent and variety of Brazilian agriculture may be obtained from the following data on the annual average production during the five years 1924-25 to 1928-29, calculated by the Bureau of General Statistics of the International Institute of Agriculture for the principal crops of the country (expressed in quintals): coffee 11,401,460; cacao 599,305; sugar 8,456,271; mate 2,030,028; tobacco: 764,599; manioc flour 8,392,268; cotton 1,172,198; rubber 243,012; maize 39,728,844; rice 8,025,634; wheat 1,336,965; potatoes 2,538,367; beans 5,783,761; lucerne or alfalfa 2,158,267. In addition in the same period there was an annual average production of 90,181,500 bales of Bahia coconuts, 1,510,721 hectolitres of alcohol and of 799,272 hectolitres of wine.

(3) A conto of reis = 1 million reis or 1000 milreis; 1 milreis = 5 $\frac{3}{4}$ d. (April 1930).

as a result of the high prices secured on the market by nuts and meat. The prices of pasture lands formerly quoted at from 40:000\$000 to 60:000\$000 and even up to 90:000\$000 per square league (1) went to 120:000\$000 as a maximum price for the same unit. The sale prices of crop lands on the special land settlements (or settlement nuclei) vary from 15\$000 to 20\$000 the hectare.

In the case of emphyteusis (*fôro*), which is also found in this province, the charges per *tarefa* (3,025 square metres) were 8\$000 for lands to be put under maize, rice, beans, etc., 9\$000 for sugar cane lands and 10\$000 for manioc lands. These rates — paid either in kind or in days' work — seem somewhat heavy, but are made less so by various allowances which are frequently made by the owner to the holder in emphyteusis (*foreiro*). In the zones where tobacco is cultivated, the rate is fixed at 25 per cent. of the product. This is the so-called *por quarto* system by which, as a traditional system, the negotiation of formal agreements is avoided. It is the custom also sometimes to pay the half of the product (*meios*); the landowner then provides for the board of a part of the labour employed.

The prices of public lands (*devolutas*) sold by the State are fixed as follows, on the basis of the Decree No. 3791 of 31 January 1921:

For 100 hectares	100\$000
From 101 to 1000 hectares . . . per ha.	1\$100
» 1001 to 2000 » . . . » »	1\$200
» 2001 to 3000 » . . . » »	1\$300
» 3001 to 4000 » . . . » »	1\$400
Over 4001 » . . . » »	1\$500

The largest area which can be sold under this Decree is 10,000 hectares. The payment may be made in one, two or three instalments, with a year's interval, the Government allowing a discount of 20 per cent. whenever the price is paid in one instalment. To this price there is to be added the surveying costs and the costs of the deed of purchase (95\$800), for grant of definitive title, etc.

Provision is also made for the emphyteusis in perpetuity of State lands (Law No. 1947, of 11 November 1920) for an area not exceeding two square leagues, capable of increase in the case of companies or undertakings which prove to possess the necessary capital for the work of exploitation, with the proviso that a sum of not less than 50:000\$000 is invested on every 10,000 hectares. For parcels of from 5000 to 10,000 hectares the State requires an annual rent of 150\$000 and 300\$000 for crop lands or pasturelands and of from 300\$000 to 600\$000 for lands with nuts, rubber and the like. The fee for the deed establishing emphyteusis is the same as that for the deed of purchase. Note should also be made of the State Law, No. 2165 of 8 November 1922, the object of which is to encourage the planting of rubber trees and of oil palms, in consequence of which lands can be obtained much more cheaply and also, up to 5000 hectares, free, when the applicants are considered to be particularly suitable for the undertaking.

Maranhão. — The sale prices of lands remained relatively stationary, fluctuating on an average round 1\$400 the hectare for pasturelands and round 10\$000 the hectare for marginal parcels of the coast zone.

Lands bearing *babassú* or Brazil nuts, *carnauba* trees or palms, supplying the

(1) One square league = ha. 4,356.

"extractive industries" and therefore having great importance for the economic life of the State, are sold at the rate of 7\$ or 8\$000 the hectare, while those covered with brushwood do not exceed in price 2\$500 the hectare. These are the most usual prices, but the properties are also valued on the basis of the plant and improvements (*bemfeitorias*) found on them, and thus prices in some coast zones reach the sum of 100\$000 the hectare.

More or less frequent also are the annual rentings of cereal lands and generally of field crops, for rents of \$100 to \$200 per linear *braça* (1) of the perimeter of the parcel to be cultivated. In the case of sugar cane and cotton crops the usual sharing is at the rate of half the product and in the case of cassava of one-third.

Piauhy. — The establishment of land values is of recent introduction, as the practice of delimiting properties only began some ten years ago. The present price mainly depends on the kind of trees found on the land in question (*vestimenta*). Lands carrying *carnauba* trees are of most value and next those with *babassú*, provided transport is relatively easy. The greater value of the *carnauba* lands is due to the fact that *carnauba* wax is more valuable relatively to the weight, as it pays better to transport 2 *arrôbas* (2) of wax, the selling value of which is 100,000 *reis*, than 2 *arrôbas* of *babassú* nuts the price of which does not at times cover the transport rates.

Climatic influences do not seem to have had much effect on the fluctuation of land values, since wet and low-lying lands involving risks of crop failure, are always sold at good prices; on the other hand the water system has a relatively important influence, the presence of water courses or springs increasing land values, especially if it is proposed to grow sugar cane or rice. The labour system seems to be relatively unimportant, possibly because there is as yet no adequate regulation of labour.

Sale prices of lands per *braça de sesmaria* (m² 14,250) are regulated as is shown by the following table:

	In zones where transport is relatively easy	In zones where transport is more difficult
Carnauba (wax-nut) lands	20\$000 to 400\$000	10\$000 to 200\$000
Babassú nut, or Brazil nut lands	10\$000 » 250\$000	6\$000 » 50\$000
<i>Mattas</i> (1) and <i>caatingas</i> (2) lands	4\$000 » 40\$000	3\$000 » 30\$000
Lands with <i>capoeiras</i> (3)	3\$000 » 30\$000	3\$000 » 25\$000
Lowlands (<i>chapadas</i>)	1\$000 » 6\$000	1\$000 » 4\$000
Lands with <i>carrasco</i> trees	\$500 » 2\$000	\$400 » 1\$000
Low wet lands (<i>brejos</i>)	3\$000 » 20\$000	1\$000 » 10\$000
Pasturelands with rich pasture	1\$000 » 5\$000	\$500 » 3\$000
Pasturelands with roughage	1\$000 » 4\$000	\$400 » 2\$000

(1) *Matta* = mainly high forest of valuable timber. (2) *Caatinga* = mainly brushwood or scrub.

(3) *Capoeira*: mainly forest cut over for timber, or felled in order to prepare the land for cultivation.

Surveyed lands are, *cæteris paribus*, worth from 50 to 200 per cent. more than those not yet plotted.

Renting of land is not usually practised. Emphyteusis charges vary, in accordance with market conditions, from 4\$000 to 40\$000 the year every *quadra de roça* (5.84 hectares).

(1) 1 *braça* (linear) = 2.20 metres.

(2) 1 *arrôba* = 14.6896 kilogrammes.

Ceará. — The extremes of climate affecting this State from time to time, form the chief reason for the fall in land values which was especially noticeable in 1928 as a result of the irregularity of the rainfall. The price of a hectare of land on the coast belt was formerly 80\$000 (dry lands) and 600\$000 (wet lands), these prices falling respectively to 60\$000 and to 400\$000; on the hills the lands suitable for coffee growing declined from 1:300\$000 to 900\$000 the hectare; on the high dry lands the price of the hectare fell from 250\$000 to 100\$000; in the interior (*sertão*) from 100\$000 to 50\$000.

High prices are given for lands on *fazendas* possessing reservoirs or tanks (*acudes*).

There is still but little renting of land. The rent—paid by the month, half year or year — for a parcel on the coast belt varies, according to the condition of the dwelling house and the crop yield, from 200\$000 to 400\$000 the hectare. There is in existence also a form of renting by verbal agreement, in accordance with which the landlord undertakes to fence the land with stakes, such fencing to remain on termination of the agreement his property. For these lands from 15\$000 to 40\$000 are paid per hectare for two, three, or four years of occupation. Not infrequently the rent is paid in kind, at the rate of one-fourth or one-fifth of the product. Emphyteusis is very uncommon.

Taking prices in relation to crops, the highest prices are given for land suited for coffee growing, *viz.*, from 900\$000 to 1:600\$000 per hectare.

In the interior of this State prices largely depend on the supply of water and its quality. On the hills and on the coast belt the presence of perennial springs has caused a rise of 30 to 50 per cent. in the value of lands nearly.

Rio Grande do Norte. — Sale prices and rents of lands in the last few years reached a high level by a series of gradual increases. Inland parcels traversed by watercourses or with artificial reservoirs are going up considerably in price and there is an unwillingness to sell. In this region which is famous for its cotton growing, unfavourable elements only appear when the problem of water for domestic or agricultural purposes presents difficulties.

In the communes of the region of Seridó land values in 1928 fluctuated per *braga de frente por mil e duzentos de fundo* (0.5808 ha), the unit of area generally adopted in the State, from 10\$ to 50\$ for grazing lands and from 100 to 200\$ for arable land. Further inland and in the communes of the uncultivated dry tract, prices for the same unit of area varied between very wide limits, actually from 2\$ to 50\$ for lands intended for pasture and from 2\$ to 400\$ for lands intended for cultivation. Finally in the communes of the rainy uncultivated region prices varied, for the same unit of area between 5\$ and 40\$ for pasture land and from 10\$ to 100\$ for arable lands. In this region — which is characterised by regularity of seasons and facility of transport — establishment of the values of these excellent lands, which are especially adapted to sugar cane, cereals and leguminous crops, is prevented by certain peculiarities of the water courses which form standing lakes and backwaters on tracts naturally fertile.

In the communes of the inland districts and of the uncultivated dry region share tenancy (*parceria*) is common, while in those of the rainy uncultivated area ordinary tenancy is also the rule, on the basis of rents of from 5 to 20\$ per annum per *tarefa* (3,025 square metres).

Paraíba. — The factors determining the value of lands in this State are very complex in relation to natural features and to the hygienic and economic conditions. In general it may be said that the holdings situated in the low wet zone

(*zona brejeira*) have a higher value than those of the high and dry lands, where the sparse rainfall makes the crop results more precarious. The following figures may be given as regards land prices :

Crops	Coastal scrub land (<i>caatinga</i>)	Area of low wet lands	Coast belt	Inland region
Cotton and Cereals	250\$-350\$	150\$-200\$	150\$-200\$	300\$-500\$
Coffee	—	300\$-500\$	—	—
Tobacco	—	150\$-250\$	—	—
Manioc (or cassava)	150\$-250\$	150\$-250\$	150\$-250\$	200\$-300\$
Sugar cane	—	350\$-500\$	350\$-500\$	—
Coconuts	—	—	50\$-100\$	—
Stockraising	100\$000	—	100\$-150\$	20\$- 30\$

Rent of land has fluctuated per *cincoenta* (12,100 square metres) between 20 \$000 and 50 \$000 for lands suitable for growing of cereals, cotton, manioc and tobacco. If lands with sugar plantations (*cannaviaes*) are in question, a kind of share tenancy is adopted, the lessees paying in addition to a sum in money 20 per cent. of the crop, which raises the rent considerably. As in fact this unit of area yields from 60 to 100 tons of sugar cane, equivalent to a value of 1 : 500 \$000 to 2 : 500 \$000, the above percentage represents respectively a sum of 300 \$000 and 500 \$000.

Pernambuco. — The factor having most influence on the formation of land values is the current price of sugar, the main product of the State. In addition to the neighbourhood of the capital and of important centres, the proximity of railway stations and good communications stimulates demand and raises values, so much so that in the environs of the capital (Recife) and neighbouring areas there are to be found parcels under sugar cane cultivation with manufacturing plant (*engenhos*) bought ten years ago at 100 : 000 \$000 and at 200 : 000 \$000 and sold today at 700 : 000 \$000 and at 1,000 : 000 \$000.

In the zones of scrub land (*caatingas*) and in the inland districts the water supply is of primary importance. In the forest tract, where the effects of the dry climate are less felt, the value of holdings with reservoirs are always, *cæteris paribus*, higher.

Generally speaking the lands most in request are those which are adapted to sugar cane, coffee and cotton and among these preference is always given to those where the ground is less steep, so that the farm machinery in general use can be more easily employed.

Quotations for coconut lands on the coast belt are various, according to the number of the trees per unit of area and the existing means of transport. Pasture lands are cheaper, their price varying from 10 \$000 to 100 \$000 the hectare. In the cotton growing communes the prices of lands intended for cotton, or for maize, beans, etc. vary from 15 \$000 to 400 \$000 the hectare. Medium quotations are made for lands for tobacco and manioc cultivation.

Rents of rural holdings and of *engenhos* are arranged on very various terms ; in some cases they are as much as 25 \$000 the hectare. The usual practice in sugar cane cultivation is share tenancy, the working of which does not however seem to be very satisfactory, partly because — owing to the absence of agricultural banks — the growers are obliged to obtain credit by private means, generally at a very high interest, which in bad years becomes a quite intolerable burden. The question of capital is said to present considerable difficulties under the special circumstances of this State.

Alagoas. — No variations of any consequence have been registered during the last three years in the prices of land, the following table giving the figures :

Zones	Forests, <i>capoeira, caatinga</i>		Arable cultivation		Pasture lands	
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Inland	14\$	500\$	10\$	400\$	5\$	150\$
Coast	40\$	650\$	30\$	300\$	20\$	130\$
Forests	60\$	1:000\$	20\$	500\$	25\$	300\$

In the price of the holdings and of the *engenhos* account is always taken of the plant and improvements belonging thereto. Other factors — with the exception, in the inland parts, of the plentiful or otherwise supply of water for household and farm purposes — are regarded as secondary.

Renting is for one or two years and the rents vary from 2\$ to 20\$ the *tarefa* according to the crops and the value of the lands in the zone. Share tenancy on the basis of half the produce is frequently found in the cultivation of sugar cane.

Sergipe. — The prices of lands for sale, renting or emphyteusis vary in accordance with the zones, the quality and the kind of cultivation. Those of maximum value are the *massapé* lands which are cool light soils, especially adapted to sugar cane. The sale price of these varies from 200\$ to 300\$ per *tarefa* in the more remote communes where the cultivation is less intensive, while a higher level is reached in the zone of Cotinguiba, owing to the excellent quality of the soil.

By a recent law of the State a tax of 20\$ per *tarefa* has been placed on *massapé* lands not cultivated in sugar and instead given over to stock raising.

Lands suitable for cotton cultivation are sold in some communes at from 30\$ to 60\$ the *tarefa* when the price of the product is low, while higher prices are reached when the market for the product is going up.

In the communes where rice is grown the sale price is 200\$ per *tarefa*. Lands for the cultivation of cotton, manioc, maize, beans and tobacco are rented at rents of 6\$ to 12\$ the *tarefa*. These prices generally go up when higher prices are quoted for the products.

Bahia. — Prices of arable land in the neighbourhood of the capital are advancing considerably, even up to 1,500\$000 the hectare. Prices of public lands vary according to the quality and the topographical and hydrographical conditions from 5\$ to 20\$ the hectare. In the more remote interior of the State quotations for land are high only when suitable for cultivation of sugar cane, coffee, cotton, tobacco and cereals. During the last ten years the prices of such land have remained almost stationary, as a result of the continuous exodus of rural workers to the Southern States. In the communes of São Salvador, Santo Amaro, Villa de S. Francisco, S. Sebastião, Matta de S. João and Cachoeira there was in the last five years a considerable advance in the value of lands intended for sugar cane growing.

In this State there are found parcels of exceptional fertility but of low value owing to malarial conditions. In the southern region the great development of cacao growing, the yield amounting to 1,200,000 bags of 60 kilogrammes, proves that the malarial is gradually disappearing. There is much very fertile land on the banks of the rivers of S. Francisco, Jequitinhonha, Pardo, Contas, Paraguassú, and these tracts might become rich areas of production of sugar cane, cacao, coffee, maize,

beans, rice and cotton except that after floods the conditions are so far from sanitary or healthy. Even the more fertile lands of the high *sertão* command only low prices owing to the region being subject to periodical droughts. There is a great demand for arable land lying within easy reach of the great rivers or in the neighbourhood of perennial springs, or in other localities where it is possible to practise irrigation.

The insufficiency of means of transport is a general subject of complaint, and it is held that in view of the natural fertility of land in Bahia and the great variety of products accounting for 32 separate agricultural exports, the economic situation would be greatly improved if the transport question received attention. Immigration with a view to farming is practically nil, a fact which is due — in the opinion of the Agricultural Inspectorate — to the absence of consumption markets in the main rural centres, since the foreigner will not settle in places where the markets are at a great distance and means of transport are few and costly.

As regards renting, agriculturists owning extensive parcels rent them for a rent of 10 to 50\$000 per *tarefa* (4,356 square metres) the year. Some take instead one-third or one-fourth of the product; but the most usual practice is the sharing by halves (*meiação*).

Espirito Santo. — Owing to the remarkable development of roads, which has been energetically pushed on by the recent Governments, there has been a decided rise in the prices of land, and high profits have been made. The means of transport which were formerly few, slow and costly, have become frequent, rapid and cheap, and it is stated that even the smallest inland centre has now roads and autocar facilities with great advantage to the local traffic. In this way Porto Alegre is linked by a system of railways and motor roads to all the adjacent communes, and acts as a large centre of the import and export trade.

The lands quoted at the highest prices are those suitable for coffee growing, the prices varying between 500\$000 and 3 : 500\$000 the *alqueire* (48,400 square metres).

There is a great demand for the forests which supply the fine timbers (*madeiras de lei*), and in this connection there has sprung up a flourishing and widespread sawmill industry. An *alqueire* of land of this type is valued at from 500\$000 to 2 : 000\$000 and more.

Lands suitable for coffee plantations and for cereals are estimated at between 100\$000 and 1 : 000\$000 and pasture lands at from 100\$000 and 500\$000 the *alqueire*.

Small parcels in the neighbourhood of urban centres have doubled and trebled in value, the prices in some places reaching 1 : 000\$000 the hectare if intended for fruit, vegetable or flower growing. The same may be said of lands for forage crops, in districts where the live stock industry and trade in dairy products are carried on.

Sites with waterfalls are especially prized for industrial purposes.

Sales of extensive lots of lands acquired as grants from the Government are made by a Company with headquarters at Collatina : a parcel of 25 hectares is obtainable on payment on the spot of 1 : 700\$000 and with an addition of 10 per cent. if the price is paid within a period of three years.

It is expected that land in the zone of São José will go up considerably in price, as the State Government has signed a contract with a Japanese Immigration Company for the introduction of 2,000 families, in the understanding that the Company opens roads, etc. A similar contract has been recently concluded with a Polish company for the introduction of 5,000 families.

Rio de Janeiro. — In this State among the causes mentioned as having most effect on the price of land is the large extent of the estates. A *fazenda* of 1000 *alqueires* does not sell easily at the price of 800\$000 the *alqueire* (27,225 square metres), while the same *fazenda*, if subdivided into lots of from 30 to 50 *alqueires*, would easily sell at 1:500\$000 the *alqueire*. Another factor which is also taken into consideration is the quality of the water supply; there is little demand for areas of the most fertile land if supplied with highly calcareous water. For the most part however the value of lands depends on the prices of agricultural products and live stock. In the communes served by the *Estrada de Ferro Central do Brazil* the quotations are highest for lowlying pasture lands. In the communes of Barra do Pirahy, Barra Mansa and Rezende, lands at a distance from inhabited centres, without facilities for communication, fetch the price on an average of 200\$000 the hectare, while those served by good roads are sold at 250\$000 and those situated close to railway stations at 500\$000 the hectare. In the communes of S. Gonçalo, Rio Bonito, Itaborahy, Magé, Cabo Frio, Nova Iguassú, Petropolis, Therezopolis, the price of land of good quality close to commercial centres or to railway lines varies respectively per *alqueire* from 1:000\$000 to 1:500\$000, from 1:000\$ to 1:200\$000, from 700\$ to 800\$000, from 400\$ to 500\$000, from 400\$ to 500\$000, from 4:000\$000, to 5:000\$000, from 3:000\$000 to 4:000\$000, from 2:500\$000 to 4:000\$000. In the commune of Itaborahy lands suitable for orange growing vary from 1:000\$000 to 1:500\$000. In the commune of Cabo Frio, the main industry is stockraising; in that of Nova Iguassú fruit growing, and especially orange cultivation; in the commune of Therezopolis vegetables, maize, beans, potatoes, etc. are grown. In the communes of Padua, Bom Jardim, Duas Barras and Cantagallo sales are made at 2:000\$000 the *alqueire*. In the communes of Campos and of Itaperuna the sale prices rise to 6:000\$000 the *alqueire* (48,400 square metres) in others the level for the same area is lower; thus at São Francisco de Paula and at Barra de São João the prices are respectively 350\$000 and 250\$000.

Generally speaking the prices of cereal lands, although much in demand, are never so high as those of coffee plantations.

In all the communes above mentioned there are also lands of inferior quality at lower prices, and in addition to selling, lands are rented or granted in emphyteusis on terms of various kinds.

São Paulo. — Sale prices of lands in the communes — which may be regarded as typical — of São Paulo, Campinas, Limeira, Piracicaba, Guarulhos, Cotia, Santo Amaro, São Bernardo, Itú, Villa Americana, Itapecerica and Amparo vary from 800\$000 to 1:000\$000 the hectare; in those of Cabreuva, Indaiatiba, Monte-Mor, Rio das Pedras, Salto, Santa Barbara, São Roque, Serra Negra and Socorro from 600\$000 to 800\$000 and in those of Araçatiguama, Itatiba, Jundiáhy, Juquery, Parnahyba, Pedreira, São Pedro e Una from 400\$000 to 600\$000.

The advance in prices which has taken place of recent years may be attributed either to the increase in population, or to the remarkable improvement in the means of communication, or to the intensification of crops in general and of some crops in particular. The increased population has led to a gradual extension of the suburbs of the communes mentioned, where at the present time plots are sold with payment by instalments. Near São Paulo for a radius of 50 kilometres the lands are now sold by the square metre. The development of the means of transport has encouraged to a high point the cultivation of oranges and fruit in general, as well as coffee growing which is the predominant cultivation.

Another fact which contributed to the raising of the price of lands of the commune of São Paulo and of the neighbouring communes is that their capitals do not offer any facilities for spending holidays in suitable spots in the country, hence it is the tendency for the commercial, industrial and professional classes to purchase a small holding where repose can be enjoyed.

As regards rents, in the localities mentioned, they vary from 100 \$000 to 400 \$000 the *alqueire* (24,200 square metres).

The enquiry goes on to indicate a group of 43 communes, distinguishing the lands according as they lie at a distance of 3, 18 or more than 18 km. from the chief town of the commune or from the railway line; the prices per *alqueire* vary — mainly according to the available means of transport — for the first category from a minimum of 300 \$000 to a maximum of 1 : 500 \$000, for the second from a minimum of 200 \$000 to a maximum of 500 \$000 and for the third from a minimum of 100 \$000 to a maximum of 300 \$000; these prices however hold good for lands the titles of ownership of which are absolutely unexceptionable. Renting of lands is also practised in these communes. Rice lands are rented in the districts of Itanhaem, Iguape, Jacupiranga, etc., at a rent of from 60 \$000 to 120 \$000 per annum per hectare. In some cases the rent is paid in kind, that is to say with a contribution of from 10 to 30 per cent. of the crops of maize, beans, rice, etc.

In 38 communes of the Northern zone of the State the prices of lands at a distance up to three leagues (1) from the railroads rise from a minimum of 200 \$000 to a maximum of 500 \$000, and the prices of lands situated more than three leagues away vary from a minimum of 100 \$000 to a maximum of 250 \$000.

It is noted that in certain communes there is no more available land. In the older communes where there is scarcity of land parcels are granted for cereal cultivation (mainly maize) in exchange for half the crop when gathered. In this case the owner gives, if required, the ground already ploughed and the seed. In the new communes the lands are similarly granted for cereal cultivation on the understanding that the grantee subsequently prepares the land for pasturage. The settler, that is to say, makes it his business to hand over, after reaping, the land cleaned and sown with forage crop seed provided by the landowner; sometimes he undertakes to provide, instead, a coffee plantation. In this case the settler occupies the parcel for six or seven years, cultivating maize, rice or beans on it, with the obligation of planting it all over in coffee by the end of the third year, receiving at the end of the sixth or seventh year from 500 to 1 \$000 for every three year old coffee plant in good condition. In communes where such is the practice the adoption of this type of concession has been forced on the owners on account of the labour shortage which is felt so acutely.

Paraná. -- Lands continue to increase in value, adapted as they are whether to the crops of cold climates or to those of temperate and tropical climates. Brazilian and foreign capitalists have invested large sums in farms, thus giving an impetus to a great variety of crops and to a wealthy stockbreeding industry. In particular the Northern zone of the State, famous for its *roças* lands, which are of immense importance for the cultivation of coffee, cotton, lucerne, etc., has been the point of concentration of capital and labour.

The prices of lands vary per hectare between the following limits :

(1) 1 league = 6,600 metres.

Coast Zone	20\$ to 40\$
Zone of Ponta Grossa	40\$ » 100\$
» » Guarapuava	30\$ » 60\$
» » Curitiba	50\$ » 500\$
Northern Zone	100\$ » 500\$

Letting of lands is less often found : on the other hand lands are often rented for the collection of mate, the grantee paying from 2\$ to 3\$ per *arrôba* (14.6896 kilogrammes) of mate gathered.

Santa Catharina. — It appears from the data supplied that there was in 1928 as compared with 1927 an advance in the value of agricultural and pastoral property of from 10 to 50 per cent., this advance being more considerable for arable lands which are always quoted at a higher value on the coast belt than pasture lands.

Public lands, as being more distant from the populous centres, command low prices. For these lands must be paid, for an area up to 100 hectares, 0.05 *real* (1) the square metre, for areas from 100 to 500 hectares, 0.08 *real*, up to 1000 hectares about 0.10, and from 1000 to 5000 hectares, 0.13. The charge for surveying is 100 *reis* per linear metre of the perimeter.

The fact that has largely contributed to the increase in price of private lands is the facility for communication, thanks to the introduction of automobiles and auto-buses, which make regular runs of more than 230 kilometres. The improvement of the system of roads has undoubtedly contributed to this introduction of motor traffic. In this way, in the commune of Chapeco one hectare of land which ten years ago cost 18\$000 now costs 50\$ to 200\$.

In the last ten years the growing scarcity of timber, without compensating reafforestation, has effected a rise in the price of forest land to the extent, for some communes, of 30 per cent.

In the hill region a certain decline in sales is noted in spite of the good prices offered, a fact due to the great influx of settlers from Rio Grande do Sul, and the consequent increase in values of the district. A farm settlement (25 hectares) costs, even without improvements, from 5 to 8 *contos de reis*, nor is it easy to obtain one.

The existence of perennial springs has an influence on the price of land, as making possible special types of cultivation (rice) or the breeding of pigs, undertaken mainly in the high plateau zone. Where springs exist, the price is 40 per cent. higher.

In the commune of Itajahy the possibility of transport of rice and of sugar cane on the river of the same name has raised the value of the marginal lands by 20 per cent. The introduction of a drainage system for the lands bordering the rivers equally raises the price in comparison with those which in the absence of drainage are likely to be transformed into swamps in the event of inundations.

On the coast belt lands suited for cultivation of banana and sugar cane have gone up in price by 40 per cent.

Generally speaking there is a preference for lands the configuration of which allows of the full use of farm machines.

For thirteen coast communes the prices per hectare varied in 1928 from a minimum of 40\$000 to a maximum of 150\$000, the prices of eight "colonised" communes

(1) *real* - the smallest fraction of *reis*.

varied in the same year from 100\$000 and 400\$000 ; the prices for seven communes where the main product was mate varied also between these two limits.

The working of the farm is undertaken directly by the proprietor or by his manager. The family assist, and wage earning labour is seldom employed ; if recourse is had to hired labour, the wage is paid partly in food and partly in money. Sometimes on the more extensive estates cultivation is done by labour from outside the farm family, or more often wage earners who live on the *fazenda* (*agregados*). These labourers, or the *agregados*, are paid always in money every fortnight, sometimes every week.

Farmworkers who have been in the employment of the farm for a considerable time have certain privileges in return for giving additional days of work ; for example they may pasture from one to three head of stock on the farm.

Leasing of land is not very common. A farm settlement (25 hectares) of land of good quality is rented on an average at 600\$000. In the localities in which the measure in use is the *braça* (a strip of land 2.20 metres wide and 1000 metres in length) lands of 50 *braças* are let, if of good quality, at 300\$, if of inferior quality, at 100\$. In these cases the lessee enters on full possession of the land, including the dwelling house, and with right of using the forestland. The most important leases are always in writing and are registered ; for the others a verbal agreement is sufficient. The period depends on the cultivation but is usually two years. The rent is paid annually in money or in kind. In the hill districts leasing of stock farms is frequent and for a longer period than is usual for arable farms.

Between land owners and farm workers a series of contractual arrangements hold good, including as usual types produce sharing in the proportion of one-half, one-third, fifth, sixth and up to one-eighth. In connection with the preparation of manioc flour and the industrial handling of sugar cane there is a kind of share tenancy in use in accordance with which the landlord assists with the land, with the *engenho*, or factory plant, with the cartage and the plough oxen, taking one fifth of the product, a quota which may be raised to one-third when the farm property is near the consumers' market, and in some localities to one half. If thereupon the tenant provides for all the expenses for the cultivation of rice, maize, and beans, one-sixth only of the crop is due to the landlord. In all the cases mentioned the seeds are usually supplied by the tenant. The period of the agreement is for one year for the rice crop and for two years in the case of manioc cultivation.

In the hill district holdings carrying the mate plant are rented, at a rent of 1\$000 to 2\$000, according to the market price of mate.

Formal agreements also are in existence in regard to the cultivation of coffee. The landowner gives the land and the cultivator is bound to plant a certain number of coffee seedlings, retaining the right to cultivate the land as he thinks fit and to use the produce as he pleases. At the end of two years the coffee plantation comes into bearing and it is handed over to the landowner without compensation.

Rio Grande do Sul. — In general lands for arable crops are worth more than pasturelands ; in fact while the prices of the former vary from a minimum of 250\$000 and a maximum of 1 : 200\$000, pastureland prices vary from a minimum of 45\$000 to a maximum of 300\$000. Lands suitable for rice cultivation are sold at an average rate of 500\$000 the hectare.

Minas Geraes. — Sale prices of lands vary according to the districts, the average values for lands in the South, West and East being approximately as follows per hectare :

pasturelands	800\$000
lands under cereal crops, sugarcane, tobacco, etc.	900\$000
virgin forests	from 1 : 500\$000 to 2 : 000\$000
coffee plantations	» 3 : 000\$000 » 4 : 000\$000
fields	» 200\$000 » 250\$000

In the Northern region these prices are subject to a diminution of from 45 to 70 per cent., the result mainly of the greater distance of this area from the railway system, the low density of the population and the system of land tenure in large estates (*latifundios*) with a consequent absence of intensive cultivation.

Public lands are also sold directly by the Government, preferably by auction ; and are also granted in emphyteusis, in accordance with special regulations approved by Decree No. 8201 of 31 January 1928.

As regards renting, according to the system most widely spread in the principal agricultural centres, the lessee pays to the lessor 20 per cent. of the produce, this quota tending to rise by 5 per cent. ; owners must fence the lands before letting.

Goyaz. — The development of the railroad system, the immigration of settlers coming mainly from the States of Minas Geraes and S. Paulo, the improvement of communications, in particular of the roads for wheeled traffic which now link up all the communes of the South of the State and are being extended also to the north, thus facilitating the lorry transport of products, are the essential factors which in the last few years have contributed to the raising of the price of lands and of stockraising estates.

The arrival of the settlers from the States of Minas and São Paulo has involved the gradual withdrawal of small owners from the south to the north of the State ; these new settlers for the most part have some small capital having sold their former property at remunerative prices. On arriving in Goyaz they find fertile lands at a price often less than half that of the property they have parted with ; accordingly they purchase a new estate (*fazenda*) which they improve and sell at a much higher rate. It is then their turn to move northwards, where they buy large tracts of land much more cheaply and again proceed to improve and sell at remunerative prices.

For a group of eleven communes in the South the prices per hectare vary in the year under review, for land with forests from a minimum of 25\$ to a maximum of 400\$, and for stockraising lands from a minimum of 5\$ to a maximum of 120\$.

Public lands are sold at the following prices per hectare : forests 4\$000, stock grazing lands 2\$000, with an addition of 25 per cent. for parcels on the banks of navigable rivers or situated on railway lines or near villages, and with the addition of surveying expenses.

In the commune of the capital grants in emphyteusis are also made with charges of \$200 and \$100 the hectare respectively for forest or pasture land.

Matto Grosso. — The highest land values are registered in the stockraising zones of the South (from 29\$ to 30\$ the hectare), in the sugar growing zones, especially in those where the larger refineries are at work (30\$ to 50\$ to 80\$000, the hectare) and in the region where the mate plant is grown (15\$ to 20\$ the hectare). The highest level is reached in the case of estates near to the main centres of exportation.

The Government also sells large plots at from 3\$ to 8\$ the hectare. Arable or

pasture lands, if near roads or navigable rivers, cost 6\$ the hectare ; those intended for the extractive industries (rubber tapping, timber cutting, etc.) vary from 3\$500 and 8\$000 the hectare, according to the distance from markets and the greater or less facilities for communications.

In regard to renting of lands it may be noted that for lands near consumption centres, the rents — paid annually or generally in kind — vary from 100\$ to 200\$000 the hectare, for farming or pastoral land respectively, including the dwelling house for the tenant. If on the other hand the consuming centres are at a distance and communications are difficult, the rent does not exceed 20\$000 the hectare.

Acre. — Lands situated on the outer boundary of the communes are sold generally at 30\$000 the hectare ; those with rubber trees, from 1\$000 to 2\$000 ; rubber forests are also rented with rent payable in kind ; the emphyteusis charges for lands owned by the commune vary from 10\$000 to 20\$000. These prices have remained at the same level since 1921 ; in 1925 and in 1926 there were signs of a tendency towards higher prices, but no sales took place. As an actual fact the greater part of the land transfers are effected by the courts or by succession.

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The enquiry here reviewed gives evidence of a general advance in land values in the majority of the States, and especially in those States in which new means of communication have been opened or the existing means improved, while prices have remained more or less stationary where there has been no progress of the kind to record. The influence of this factor and of others on the fluctuations of sale prices and rents of lands varies naturally, as has been seen, according to the special conditions in each State. Undoubtedly the problem of the means of communication in a country so vast as Brazil, characterised by topographical conditions so varied and complex, is of the first importance. The regular working of the produce markets depends on the solution of this problem, for in regions where the roads and railway systems are defective or inadequate the productive capacity is impaired and both lands and markets lose value. The Federal Government is fully alive to this fact, and with the support of the State Governments gives the most careful attention to the development of roads and transport. On this development depends the intensity of the trade movement, which — in view of the present economic expansion of the country — promises to show a striking development, already reflected in the export statistics.

G. C.

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CREDIT

Present Position of Agricultural Credit in Spain.

The development of agriculture rests upon the basis of the credit applied to it and the secret of the success of any institution which makes this its objective does not lie in the greater or less amount of its capital, nor in the facilities given to its operations, nor in the low rate of interest at which they are effected, still less in the greater range of types of loan. The determining factor is no other than the decentralisation of the credit; its benefits must extend to the most remote spots; the help of the bank should be available for the farmer at whatever distance so that in moments of difficulty he can, without losing his independence, so act as to obtain all possible advantage from his efforts. The most efficacious credit legislation will be that the advantages of which are most widely extended.

In Spain in recent years there has been a succession of legislative measures bringing credit into correspondence with the modern requirements of agriculture. The agricultural credit problem was from an early period closely linked with the typical institution of the *Pósitos*; the position was however revised in 1906 and from that time laws were passed in succession restating the principles of credit and establishing new institutions. It is proposed to refer to all of these and to describe the working of certain institutions in practice, giving the actual figures in the case of operations for which official statistics are available.

Pósitos. — The first Spanish credit institution, which preceded by a long time the institutions of the same kind in other countries, is that of the *Pósitos*.

Originally the *pósitos* were grain warehouses, mainly for wheat, whence was supplied bread in times of scarcity and to the farmer grain for sowing and also for consumption in the months furthest from harvest, thus keeping him out of the hands of the usurer.

The *pósitos* were of two classes : public warehouses, known as *concejile*, founded for the communes and administered by their municipal councils subject to State legislation, and private warehouses of ecclesiastical foundation almost always having the character of charitable institutions. Organisations of a similar kind are the *Monti Frumentari* in Italy.

The first appearance of the *pósitos* is in the XVIth century ; in 1584 the first official regulation was laid down, from which it appears that the main purpose of the institution was the provision of bread and as secondary the granting of loans. In 1782 regulations were made for them as agricultural credit institutions; later they were the subject of fresh measures but in consequence of bad administration they were scarcely able to do more than maintain existence.

An end was put to this unsatisfactory state of affairs by the law of 1906 which simultaneously put the administration on a sound basis, and organised the working with due regard to the requirements and to the progress of agriculture. By this law the *pósitos* were empowered to negotiate loans in currency, with personal guarantee and pledge of goods, granting loans up to 50 per cent. of the value of the mer-

chandise deposited. The law also created the *Delegación Regia de Pósitos*, with a view to a proper regulation of their working and administration. In 1912 the owned capital of the *positos* amounted to 50 million pesetas, there was a large increase in their number, and their loan operations in the period from 1906 to 1912 amounted to a total of more than 22 million pesetas. The course pursued by these institutions during these years was one of steady progress along the lines adopted, with development of rural credit and diffusion of the benefits throughout the agricultural classes. In 1923 the *positos* passed under the Ministry of Labour (*Ministerio del Trabajo*) and new laws were enacted tending to bring them into line with agricultural progress and requirements, and finally in 1928 a law of this Ministry definitely co-ordinated all the previous measures, giving full scope to its activities and embodying in its regulations all the experience which has been gained in the course of time on the subject of credit operations.

Loans are at present arranged by the *positos* as follows ;

- (a) with mortgage security.
- (b) on pledge of crop or stockbreeding products, either while remaining on the farm or removed to store, including crops of the same year still ungathered ;
- (c) on personal credit, either on ordinary surety or on the joint and several liability of a number of borrowers.

In the case of loans with pledge or mortgage guarantee, security is required covering all the risks.

The maximum amount of loans on pledge or mortgage guarantee is fixed at 1000 pesetas in *positos* in which the liquid capital does not exceed 10,000 pesetas ; 2,500 in those where the liquid capital does not exceed a total ranging from 10,000 to 50,000 pesetas, and 5 per cent. of the capital when that exceeds 50,000 but does not amount to 200,000 pesetas. In *positos* with larger capital the same 5 per cent. limit is to be maintained for loans to individuals, but this may be raised to 10 per cent. for loans made to corporate bodies duly constituted.

The maximum sum granted as a personal loan is to be 250 pesetas in the *positos* the liquid capital of which does not exceed 10,000 pesetas, 500 in *positos* where the capital is from 10,000 to 50,000 pesetas and 10,000 in the case of *positos* with larger capital.

The maximum period for personal loans and loans on pledge security is fixed at one year, unless a less period is made necessary by the nature of the pledge. Mortgage loans may be arranged for ten years as maximum and are repayable by annual amortisation payments of equal parts of the capital with the interest due. The borrower may at any time pay off the whole or some part of his debt, with consequent diminution of the interest payable.

The annual rate of interest on the loans is 5 per cent., payable in monthly instalments. All interest not paid will be added every twelve months to the principal and fresh interest will be payable on the whole sum.

The above is an outline of the origin, development and present position of these typical institutions.

Mortgage Bank and Small Holdings Development Fund (El Banco Hipotecario y la Caja de Fomento de la Pequeña Propiedad). — The Mortgage Bank of Spain was founded in 1872 and from the time of its foundation has extended its benefits to agriculture under the various forms of its mortgage credit operations. By the Law of 20 July 1928 new terms of constitution and consolidation were approved and the Small Holdings Development Fund (*Caja de Fomento a la Pequeña Propiedad*) was linked with the Bank. The main object of this measure was to

extend the scope of the social agrarian policy by rendering available ample funds without making a direct charge for capital on the State Budget. This is achieved, on the one hand, by the creation of the Fund referred to, which is a self-governing although a State organisation, and on the other hand by the incorporation of the Mortgage Bank into the social policy of the State, which alike makes annual contributions and participates in the loans made for social purposes.

By the new terms of constitution the capital of the Mortgage Bank will continue to be 50,000,000 pesetas divided into 100,000 shares of 500 pesetas each and when so empowered by the Government may increase its capital to 150,000,000 pesetas. The Bank will be managed by an Administrative Council consisting of twelve councillors elected by the shareholders, and two by the Ministry of Finance, under the direction of a Governor who will be elected or withdrawn at the pleasure of the Government. The number of councillors elected by the shareholders may be raised to 22; they must be of Spanish nationality.

The principal objects of the Mortgage Bank are: to lend on first mortgage of real property registered in the Register of Property, a sum equivalent to the half, as maximum, of its taxation value, repayable over a long or short period, with or without amortisation; to obtain credits secured by mortgage and conforming to the conditions just mentioned; to issue in virtue of these operations and up to the total amount of the sums lent, mortgage notes repayable within fixed periods or by lot. These mortgage notes will be assimilated to public bonds in respect of applications to the Bank for payment of capital and interest at the time of maturity. The Bank will employ every year for the amortisation of its notes the sums received from borrowers for amortisation or repayment of the capital which they owe. The rate of interest on the mortgage loans will always be equivalent to that of the notes issued in respect of these loans.

A most important innovation of a financial nature is introduced by the new terms of constitution; the Bank is to cede annually to the State a share in its profits varying from 5 to 52 per cent. according to the amount realised. The Mortgage Bank moreover is to be obliged to open with the State a credit account up to a maximum of six millions of pesetas on which account no interest will be chargeable from the time that the Bank's profits exceed 8,000,000 pesetas. By another provision the Bank must place at the disposal of the *Caja* all its technical and administrative staff when required.

The official figures are available of the loans made by the Mortgage Bank (*Banco Hipotecario*); in the year 1929 they amount to 157,432,126 pesetas; in the year 1928 the figure of operations was only 136,616,085, giving an advance in 1929 of 20,816,041 pesetas.

The result of the financial year is very satisfactory not only in respect of this increased figure as compared with 1928, but also from the fact that the difference is greater than any previously noted in the annual balance sheets of any other two consecutive years. The difference shown between 1927 and 1928 was only 7 million pesetas.

Since the foundation of the Bank — year 1872 — the total value of loans up to 31 December 1929 is 1,094,484,644 pesetas.

This last figure and those already given for the financial years 1928 and 1929 represent the whole of the operations performed by the Bank; no data are available showing the proportion representing the operations of a strictly agricultural nature, although these, it appears, constitute a decided majority.

The Small Holdings Development Fund (*Caja para el Fomento de la Pequeña Propiedad*) is exclusively designed for the negotiation of advances and financial

assistance, formerly undertaken by the State, for social purposes including agricultural. The *Caja* is to be directed by an Administrative Council, under the chairmanship of the Governor of the Mortgage Bank and consisting of seven members, five of whom are appointed by the Ministry of Finance and two by the Bank. Among other resources the *Caja* is to count upon an annual grant from the State, on the repayments of the loans made for social purposes according to previous legislation, on the participation of the State in the profits of the Bank in the manner already mentioned, on advances made by the State Treasury, etc. It is empowered to open current accounts guaranteed by the State up to a maximum of 50 million pesetas, to receive loan deposits, to issue bearer notes at long or short date with the guarantee of the bonds of the National Debt.

The *Caja* should deal with all the business connected with the agrarian social policy, such as loans for the construction of dwellings, purchase of estates intended for parcelling or for completion or preservation of small agricultural or other properties. No loan made by the *Caja* is to exceed 80 per cent. of the value of the mortgaged real property.

A reserve fund is to be formed up to 10 per cent. of the capital tied up in loans. With the profits obtained a capital fund must be built up which will be used to refund to the State the bonds of the Debt which it may have surrendered to the *Caja* and to buy up on the market any that are in circulation.

All loans for social purposes are exempt from taxes, as are also purchases or transfers of estates on which loans have been made.

Foreign Bank of Spain and Export Credit Insurance Company (Banco Exterior de España y Seguro de Crédito a la Exportación).— The establishment of these two organisations followed as the final measure of 1928. The object of the Government in setting up these credit institutions was to open new horizons to agriculture and to national industry which is every day increasingly in need of expansion. The Decree of establishment thus simultaneously regulates two institutions which have a common purpose and which should keep in close touch the one with the other.

The objects of the *Banco Exterior* to effect credit operations in connection with export and import of commodities between Spain and other countries; to promote and finance the establishment abroad of firms dealing in Spanish goods. The initial capital of the Bank will be 150 million pesetas in 500 shares held by name.

The Bank will be empowered to issue notes representing loans taken up by it in foreign undertakings which absorb Spanish products; it will organise a service of commercial information on foreign markets; it will establish during the three first years ten branches in as many foreign countries, it will constitute a reserve fund for bills of exchange and credits on foreign countries; it will promote and assist the formation in Spain of consortia or unions for the encouragement of export trade, etc.

The Governor of the Bank will be appointed by the State and will have the right to veto proposals. The Administrative Council will be composed of 20 members at most, representing the activities of the nation. The State makes an advance to the Bank of 15 millions repayable without interest for the expenses of the installation of branches in foreign countries.

As regards export credit insurance, the State with the support of all genuinely Spanish insurance organisations is promoting the formation of a Company with a minimum capital of six million pesetas, of which these organisations will subscribe four and the *Banco Exterior* two million. The Company will insure only

risks of losses arising from the export of Spanish merchandise. The insured goods must have been produced wholly or principally in Spain, whether they are agricultural or manufactured commodities. The insurance will cover both losses which are finally irrecoverable and those which result from non-consignment to the purchaser of the exported goods, up to a maximum of 75 per cent. or up to 20 per cent. of the invoices, according as it is a question of one or the other type of loss.

The State assistance will take the following forms: to subscribe to the Company the half of the indemnities which it pays on the ordinary insurances and the total amount of the extraordinary losses, obtaining in exchange a proportional part of the premiums and exempting from taxes the constitution and amended constitution of the Company. The State is empowered to assume a higher risk than the half of that covered by the Company, and even as much as the total amount, when it is a question of certain very important exports or supplies to the State and to foreign public bodies, or if it is desired to avoid a catastrophic loss. It will also collect, besides the proportion assigned of the premiums, fifty per cent. of the profits made by the Company after allowing 8 per cent. to the shares.

The Company will be administered by a Council, consisting of ten members appointed, three by the State and four by the insurance organisations, two by the *Banco Exterior* and one by the Chambers of Commerce.

National Service of Agricultural Credit (Servicio Nacional de Crédito agrícola).— The Royal Decree of 24 March 1925 establishes this service the principal object of which is to give assistance to the growers on small or medium sized farm holdings in order to enable them to improve their farms and bring them up to the level of modern requirements as regards cultivation as well as to provide for the contingencies of poor harvests. It is felt that if the State does not provide the economic means for agriculture, the poorer farming classes will inevitably be compelled to have recourse to moneylenders.

The inauguration of this service was accompanied at the outset by many difficulties, and certain defects were noted, but since practical considerations are fully recognised by the law, the necessary modifications have been introduced in its application, and every effort is made to diffuse as widely as possible credit facilities and to bring them all the time more within the reach of the small farmers.

Thus it will be perceived that there is an extension of the sphere of operations of this service which were at first limited to loans on wheat, but have subsequently been extended to the chief agricultural products of the nation ; wine, oil, fruit, etc. Side by side with the legislative provisions in respect of this service, there may be noted on the other hand the resolve already clearly manifested of diffusing credit. And with this object loans are being made to the small rural banks, to the unions and to the *pósitos*, making use of them as intermediaries for rapidly reaching the rural worker.

By a brief summary of the Royal Decree of 22 March 1929, the actual position of the working of the National Service of Agricultural Credit will be made clear, since that law is the compendium of the whole theory which has been for the past four years promulgated for the encouragement of agricultural credit activities in Spain.

In virtue of this law, the Service of Agricultural Credit is attached to the Ministry of National Economy, under the *Dirección General de Agricultura*, and is administered by a Council (*Junta*) known as the *Junta del Crédito agrícola*, which is composed of a President, who is the Minister of National Economy, the Director General as Vice-president, and members who are appointed and their number fixed

by the Government selected from among persons of recognised competence in agricultural and economic questions. The Council is divided into sections with a view to facilitating its working.

The capital which is at the disposal of the Council for operations of agricultural credit will be 100 million of pesetas; the State contributing 75 million and the agricultural organisations the remainder at the rate of not less than 10,000 pesetas each.

The loans must necessarily be devoted to agriculture and stock-breeding or to the transformation of the products actually for the producers themselves. Loans may be applied for to meet the ordinary expenses of cultivation or of maintenance of stock or for improvements as regards either of these ; to establish plantations of trees and forest stands ; to transform dry lands into irrigated land ; for the lighting of watercourses and irrigation channels , in short for any purpose connected with agriculture, stockbreeding or forestry.

Mortgage loans which are not made by the National Service of Agricultural Credit with its own funds may be negotiated by means of the financial facilities given by the Small Holdings Development Fund (*Caja para el Fomento de la Pequeña Propiedad*). This arrangement is a good illustration of the connection existing between the different credit institutions, which is even more clearly shown in the other arrangement by which one of the members of the Council of Agricultural Credit (*Junta del Crédito agrícola*) is also a member of the *Caja*.

Loans may be given agricultural organisations and federations, provided they are legally constituted and offer adequate guarantees. Agricultural organisations receiving in deposit products of its members for transformation or sale may offer these products as guarantee to the *Crédito agrícola*, and can in this way obtain loans, if they have been authorised, for the owners of the produce.

Private individuals will have a claim to loans when guaranteed by mortgages on real property of an agricultural, stockbreeding or forestry nature, or when they offer a guarantee by pledge of agricultural or livestock products of their own, adequate in the judgment of the *Servicio de Crédito*. These individual loans will have to be larger than 2,500 pesetas and will not exceed 25,000 pesetas for the loans on pledge of produce and 50,000 for mortgage loans. All property serving as guarantee must be insured against all insurable risks.

For loans to agricultural organisations there will be accepted as guarantees, personal surety, pledge of produce and mortgage security. Loans to the *pósitos* are secured on their own capital. The amount for personal surety will be graduated in proportion to the working capital of the borrowing institutions and to the property of individuals or Associations which belong to such institutions. Pledges on produce will be graduated in proportion to the value and category of the crops or livestock given in pledge and will be accepted up to a maximum of 60 per cent. of the value at which they are estimated by the Executive Committee. Mortgage security will be graduated in proportion to the value of the property which is to be mortgaged and will not be accepted for more than 65 per cent. of the value for which it is registered in the Register of Property. Loans to the *pósitos* cannot exceed 80 per cent. of the working and available capital of the *pósito* in question.

The periods for which the loans are granted are precisely those where in the operations for which any loan is granted can be effected, the maximum being as follows : for loans on personal guarantee, one year and a half ; for those on pledge of produce, three years, and for mortgage loans, twenty years.

The rate of interest of the separate classes of loan to private individuals will not be higher in all than five and a half per cent. The interest to be paid by the

organisations will be less than that paid by private individuals by 0.75 per cent. and for the *pósitos*, 1.25 per cent. less than that indicated for private persons.

In addition loans may be made to agriculturists who possess *standing crops* either on lands belonging to them or even on land which they farm on lease. By standing crops are meant produce which is not yet stored in barn or warehouse and which on account of its being still ungathered is one of the main sources of anxiety to the cultivator in the whole cultivation cycle, in view of the expenses which the harvesting entails in respect of wages, carting and storage. The standing crop will constitute the guarantee of these loans acting as a pledge with the endorsement of a third party who may be any person of solvency or an agricultural organisation (union, *pósito*, etc.).

The crop must be insured against all risks. The amount of the loan is not to exceed 25 per cent. of its probable value. The reason for this proportion not being higher is that the purpose in view does not represent a higher expenditure and that the farmer, while ready to keep his crop warehoused, retains the right to contract a new loan of the type that has been indicated on agricultural products, although naturally 25 per cent. will have to be deducted from the amount representing the new operation.

The following statement may be made of the figures of loans as shown by the Service of Agricultural Credit for the six months of working in the year 1925 and for the three following financial years :

1925 (six months)	3,951,499
1926	5,121,373
1927	15,420,125
1928	30,773,528

A recent measure dated 27 December 1929 sets forth the principles established by the legislator with the intention of giving the widest possible scope to the advantages of agricultural credit. By this measure a *pósito* is formed in all communes of a strictly rural character and with a population of below 5000 inhabitants. The National Service of Agricultural Credit will give financial assistance to those *pósitos* of new creation and is empowered to make loans to them up to 80 per cent. of their working and available capital on the same conditions of guarantee and interest as have already been indicated for those institutions in the comment made on the principles governing the *Servicio de Crédito*.

Four thousand *pósitos* will be established which will in addition to those in existence make nearly eight thousand.

There are also in Spain the Federations of Unions with their own funds where member cultivators find protection ; some of these Federations are of great importance ; that of the Province of Salamanca, for example, which federates 84 unions, negotiates loans of all kinds to agriculturists who belong to the Unions to a total of more than twelve million pesetas. The Savings Banks of the *Montes de Piedad* have been devoting their activities to mortgage loans to agriculture, exercising wider powers in this respect in the provinces of the North of Spain.

The above is a summarised account of the present position of agricultural credit in Spain. The special means employed by the State to further the progress of agriculture have been indicated. The law makes provision all the time for the decentralisation of credit so that it may so far as possible pass directly into the hands of the cultivator, which is exactly the idea underlying the measure which

establishes *pósitos* in all parts, including the most remote, of the Peninsula. On the other hand, it takes modern tendencies into account, gives all support to the farmer and protects him in the marketing of his products even beyond the frontiers of Spain through the agency of the *Banco Exterior* and the Export Credit Indurance scheme and the *Seguro de Crédito a la exportación*.

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Boletín Oficial de Agricultura técnica y Económica. Various issues in the years 1925 to 1929.

ECONOMIC AND SOCIAL CONDITIONS OF THE AGRICULTURAL CLASSES

Country Women's Associations in Various Countries (*Continued*).

The account of farm and country women's associations in different countries, based strictly on replies received to an enquiry sent out in January last by the International Institute of Agriculture, is here resumed, and includes Denmark, Finland, Germany and the United States of America.

DENMARK. — Country women's associations, of which 85 exist in this country, are grouped in a Federation known as *De samvirkende danske Husholdningsforeninger*, the headquarters of which is at Kamstrup near Roskilde. The total membership is 6,500. The object of these associations is to give instruction and advice to country women on rural household management. Courses, lectures, exhibitions and meetings are arranged and instruction is given on food stuff values and also on household accounts. Enquiries are made in regard to any new articles of food, etc. The associations were started in 1920 by private initiative, but since 1928 State subsidies have been made in respect of household management advisory work.

The Federation publishes a review known as *Tidsskrift for Husholdning*.

The existence is also reported of a union of the housewives' societies of Sweden, Norway, Denmark and Finland, which has held Congresses at Oslo and at Copenhagen.

FINLAND. — In Finland there are a number of organisations concerned with the vocational and cultural aspects of the life of country women and girls. Of these the following are the most important: (a) the *Suomalainen Marttaliitto* or Union of Finnish Housewives consists of 450 local associations grouped into 15 Federations, the total membership being over 30,000. This organisation was founded in 1890 and has for its object the co-operation of women of all classes but, in view of the prevailing agricultural character of Finland, a large proportion of the members are rural housewives. (b) The *Finlands Svenska Marthaförbund* which is a similar organisation of Swedish-speaking women consists of 200 local associations grouped into 11 Federations, with a total membership of about 15,500. (c) The *Maamiesseurojen naisosastot*, or Women's Sections of the Agricultural Unions, are independent organisations closely connected with the agricultural unions of Finland and thus forming the farm women's associations in the strict sense. In 1928 the number of these sections was 150 with a total membership of 20,760.

All these organisations were formed as a result of private initiative but receive State grants. A fourth organisation, *Maatalouskerholiitto*, or Federation of Rural

Clubs, was instituted by the State, but is mainly concerned with the development of rural interests and farming aptitudes among young people.

Activities. — The object of all these unions is the same : to encourage women in the country to practise self improvement and to develop the potentialities of their own calling. All the activities appropriate to the management of a rural household therefore claim the attention of a union, *viz.*, house work, cookery and baking, child nurture, hygiene, gardening, handicrafts and poultry rearing. The methods employed are as follows : women advisors are appointed in housekeeping, gardening and handicraft ; arrangements are made for lectures, meetings, exhibitions, courses, competitions, excursions and also for purchases in common, as for example of seeds.

Publications. — The *Suomalainen Marttaliitto* publish a monthly journal under the title of *Emäntälehti*, while that issued by the *Finlands Svenska Marthaförbund* is known as *Husmodern*, and also appears monthly.

GERMANY. — The development of country or farm women's associations has been extremely vigorous in Germany. The movement dates from the early part of this century, the first association being actually formed in East Prussia in 1898 and even before the war associations, for the most part grouped in Federations, existed in nearly every province, with the definite object of encouraging the woman's share in the farm enterprise and the local marketing of home products. In 1916 the National Federation of Farmwomen's Associations (*Reichsverband landwirtschaftlicher Hausfrauenvereine*) was instituted, grouping the existing provincial Federations, and this is at present the largest and most important vocational organisation of country women in Germany, comprising in all 1,766 associations grouped into 25 State and provincial federations, with a total membership of some 120,000.

The *Reichsverband landwirtschaftlicher Hausfrauenvereine* in principle covers the whole of Germany, but in fact is not equally well represented everywhere, owing partly to the economic and partly to the religious differences that occur in the various regions of Germany. As a consequence, two other federations have been formed, *viz.*, the *Westdeutsche Landfrauenvereinigung*, which is composed of the Farm Women's Associations of the Rhine Province and those of Westphalia, and the *Katholische Landfrauenvereinigung*, which groups the farm women who are members of the German Catholic Women's Union (*Katholischer Deutscher Frauenbund*).

More recently and in order to make provision for the special interests of the country women who are members of organisations concerned with social welfare activities among women and young people but not necessarily exclusively rural in character, the National Committee of Country Women's Federations (*Reichsausschuss ländlicher Frauenverbände*) has been formed. This Committee is a section of the German Union for Preservation of the Rural Home and Rural Welfare (*Deutscher Verein für ländliche Wohlfahrts- und Heimatpflege*), and acts as a centre of collaboration for nineteen unions and federations, including the West German and Catholic Farm Women's Federations already referred to besides others of a predominantly urban character, confining its action to the interests of the country women members.

A certain number of associations are in existence which deal with the training of women and girls for rural life and interests, but these are not strictly speaking associations of farm or country women.

Activities. — The *Reichsausschuss ländlicher Frauenverbände* has of late mainly given attention to the provision of qualified women teachers for country schools instruction in handicraft, girls' continuation schools, rural housing, the scientific

organisation of the work of the farm woman and in particular with the unsatisfactory hygienic and social conditions that have resulted on economic development, and the problem of their remedying or prevention. These questions are handled partly by select committees and partly by public meetings. In accordance with its character as a centre of collaboration and of scientific investigation the *Reichsausschuss* confines itself to bringing the results of its enquiries to the knowledge of the component federations or unions.

The objects of the *Reichsverband landwirtschaftlicher Hausfrauenvereine* are vocational and economic in scope. The first clause of the statutes of the Federation refers to the recognition of household work as a profession and the proper equipment of the woman for her position and occupation. The activities include: the provision of classes and courses for women and of continuation schools and classes for girls in household and agricultural subjects; the protection of home grown agricultural products, especially fruit and vegetable growing; improvement of marketing facilities, organisation of egg circles, of bee and poultry keeping and small rural industries; the promotion of social and educational gatherings, broadcasting, exhibitions, competitions, etc.

The objects of the *Westdeutsche Landfrauenvereinigung* are similar, the activities being confined to the two provinces of Rhineland and Westphalia. The *Katholische Landfrauenvereinigung* is also a vocational organisation, but naturally adopts the position that the economic aspect of the work is closely linked with ethical and religious aspects, affecting family life and training for life and occupation, and that such aspects cannot receive adequate attention if left to secular organisations.

All the Federations owe their existence to the foresight and energy of individuals, and depend mainly on the contributions of members. State aid is received for any work of public utility undertaken by them, such as schools, courses of different kinds, etc. but these grants are not large.

The *Reichsverband landwirtschaftlicher Hausfrauenvereine* publishes a weekly periodical, entitled *Land und Frau* this is circulated also regularly with the *Illustrierte Landwirtschaftliche Presse*.

The *Reichsausschuss ländlicher Frauenverbände* has no organ of its own, but makes use of the monthly journal *Das Land*, published by the *Deutscher Verein für ländliche Wohlfahrts- und Heimatpflege* for announcements and special articles.

UNITED STATES OF AMERICA. — The distinguishing feature of the organisation of farm women in the United States is its national character. In 1913 the United States Congress passed an Act for the establishment of home demonstration work on a national scale. The work which was intended to benefit women on farms and in rural areas began in the next year and is carried on through the Extension Service of the State Agricultural Colleges under the direction of specially trained county home demonstration agents. Classes are organised and inspections carried out even in the most remote districts, and an integral part of the scheme consists in the home demonstration clubs which women and girls are invited to join, and which provide for their social as well as their educational needs. In this way there is co-operation between the Government, the Agricultural College and the farm people themselves, the women taking their full part. The benefit to American farm life has been very great, and the high standard of culture and comfort reached is in many cases directly due to this institution.

In addition many rural clubs are now linked with the General Federation of Women's Clubs with headquarters in Washington.

(to be continued).

C. H.

FARM ECONOMICS

Dairy Farm Management in New Zealand.

The great possibilities of dairy farming in New Zealand, and more particularly in the North Island, began to be realised as early as the middle of last century when the factory system of manufacture of dairy products was introduced, and from that time onwards, owing to a combination of private enterprise and State encouragement, and with the adoption of modern methods of herd testing, mechanical milking, grading and refrigerated transport of products, dairying has become the most important industry in the country. The total production of butter fat has increased since 1901-2 by 448 per cent., the figures being, approximately, in 1901-2, 21,000 tons, in 1920-21, 58,000 and in 1927-28, 115,000 tons. The export of butter in 1926-27 was 68,038 long tons, and the cheese export was 74,338 tons, the respective values being £9,761,537 and £5,338,376, the two together being equivalent to more than one-third of the total value of New Zealand exports (1). It is estimated that approximately one-quarter of the population is engaged in one or another branch of the dairying industry.

In view of the above the enquiry recently completed by the Farm Economics Branch of the Fields Division of the New Zealand Department of Agriculture, the object of which was to ascertain the relative importance of the various factors tending to success in dairy farming and the effects of management on returns, must be of interest to all countries in which this industry is of importance.

It is proposed here to summarise the results of this enquiry while adding some accountancy figures which have recently been compiled in reference to certain representative New Zealand dairy farms.

Dairying in New Zealand is a specialised type of farming, rather than a department of mixed husbandry. In 1926-27 out of a total of 1,280,212 dairy-cows in the Dominion, 1,064,987 were maintained on holdings used principally for dairying, the areas of which vary from 40 to 2000 acres. The land is for the most part under permanent pasture, the equable climate rendering a long grazing season possible and making it less necessary to resort to forage crops. In addition to the milking herd there are other cattle employed mainly for herd maintenance, the heifers being home reared. Pigs are kept, and in some cases also a few sheep and horses, the latter chiefly for riding.

The enquiry of the Farm Economics Branch relates to 206 farms in the Waikato and Taranaki districts in the North Island, and the farms vary in extent only between 50 and 250 acres. The selected farms were visited at the end of the season and the data collected relative to the past year. It should be said here that the Farm Economics Branch directs attention only on farm management to the exclusion of the problems connected with marketing, co-operation or other factors involved in the disposal of produce. Since the butter-factories collect the home-separated cream from the farmer's own gate and the milk for the cheese factories need never be transported more than a few miles, there is a complete separation of production from elaboration or transformation of the products, and accordingly marketing problems do not arise for the individual farmer.

(1) The value of the exports from New Zealand for 1928 was nearly £48,500,000, the value of the butter export was £10,915,000, and of the cheese export £5,582,500, with smaller exports of preserved milk and casein

It is assumed by the enquiry that, as the farm receipts depend mainly on payments made by the factories for butter fat — milk for cheese being also paid on a butter fat basis — the criterion of success in farming is the production of butter fat per unit of area farmed, i. e., per acre. As is pointed out by the writer of the memorandum, Mr. E. J. Fawcett, in an article with reference to this enquiry in the *New Zealand Journal of Agriculture* (November 1928), "interest, rates and general maintenance have to be paid on the whole of the farm, and unless each acre is producing its fair share, the expenses connected with it have to be met from the rest of the farm". It is of course realised that the time may come when increased production will only be possible at an uneconomic expenditure of capital and maintenance costs, but this stage has not been reached for the farms under discussion.

The first part of the survey was directed to ascertaining the relative importance of carrying capacity per 100 acres, production per cow and farm area in procuring high butter fat yields per acre. It is clearly shown by a series of tables that of the interdependent factors contributing to a high acre production, high carrying capacity comes first, next high butter fat average per cow, and then size of farm. On grouping the farms according to butterfat production per acre, it is seen that the number of cows carried and the per cow average yield both decrease with the decrease in yield per acre, while the area of the farm increases.

TABLE I. — *Farms grouped according to butterfat production per acre.*

Group	Number of Farms	Butterfat per acre: Range of group	Butterfat per acre: Average	Cows carried per 100 acres	Butterfat per cow: Average	Area of farms: Average
		lb	lb		lb	Acres
1	20	151-170	161.90	53.5	302.7	78
2	20	131-150	139.04	49.0	283.8	92
3	47	111-130	119.54	44.0	271.7	100
4	54	91-110	99.66	38.2	260.9	111
5	36	71-90	81.96	33.8	242.5	111
6	16	51-70	63.83	29.3	217.8	136
7	13	50 and under	38.08	19.8	192.3	187

On the other hand a grouping of the farms by cow carrying capacity and cow production respectively reveals the fact that the number of cows carried per 100 acres is more closely associated with high per acre production of butter fat than is any other factor, although as a general rule the average production per cow on farms with high carrying capacity is also high.

TABLE II. — *Farms grouped by cow carrying capacity.*

Group	Number of farms	Cows carried per 100 acres range of group	Butterfat per acre	Butterfat per cow average	Area of Farms acres
			lb.	lb.	
1	13	55-59	162.99	285.1	105
2	26	50-54	137.60	265.1	83
3	23	45-49	126.13	270.7	104
4	34	40-44	118.79	271.6	96
5	41	35-39	98.94	265.9	108
6	41	30-34	85.62	260.2	112
7	14	25-29	71.24	264.9	149
8	14	20-24	47.06	213.9	123

TABLE III. — *Farms grouped according to per cow production.*

Group	Number of Farms	Butterfat per cow range	Butterfat per acre average	Cows carried per 100 acres range of group	Area of farms acres
		lb.	lb.		
1	13	326-350	156.85	46.2	98.0
2	28	301-325	181.09	42.1	95.0
3	40	276-300	116.86	40.5	92.0
4	41	251-275	109.69	41.6	106.9
5	46	226-250	94.07	39.0	107.0
6	24	201-225	79.65	37.0	136.5
7	14	200 and under	51.37	28.7	145.8

The comparison, especially of the first four groups, of Tables II and III shows that even with high herd averages the butter fat produced per acre on farms grouped according to production per cow is less than the production per acre of groups, as shown in Table II, with lower herd averages but higher carrying capacity. In other words it is possible to procure a high average of butter fat per acre from comparatively low yielding cows on land of high carrying capacity *and stocked to capacity* but it is not possible to do so with a badly understocked farm of high producers. For many years past in New Zealand stress has been laid and rightly so upon increasing herd averages, but if there is sufficient feed for all the animals of a herd it is unsound to cull the poor yielders unless the discarded animals can be replaced by higher producers. As Mr. Fawcett puts it, "other things being equal, the number of cows carried per given area determines the limits of butterfat production".

It appears from Tables II and III that carrying capacity is usually highest on small farms, and that small farms appear to be associated with high herd averages. It is naturally easier to stock a smaller area, and the higher herd averages are in part no doubt due to the better quality of the land of small farms. But in the view of the writer, it is the labour available on the small farms "combined with more intimate contact with the herd, rather than natural soil fertility, which tends towards a higher herd average". Table IV in which farms are grouped according to area shows as might be expected that small areas are associated with high per acre production but that correlation with other factors is not very decided.

In regard to small farms it has to be remembered that the actual amount earned, however well managed a farm may be is necessarily limited by the area, while it costs as much to live on a small farm as on a larger one. As there is a demand for farms requiring comparatively small capital outlay the purchasing price per acre of a small farm is often higher than of land of similar quality in larger areas, but the individual purchaser of a small farm will not necessarily have acquired a more remunerative property.

The factor of length of time of occupation of the farm is here also introduced and, although it is impossible within the limits of this article to reproduce the process of calculation in regard to this factor, it may be said generally that in the 190 cases examined the tendency had been to overstock when taking up land, that during the first eight years an endeavour is made to increase herd average but with decrease of carrying capacity, production per acre also decreasing. This is followed by increase in carrying capacity and in spite of a simultaneous decline in per cow production, production per acre also increases, and with carrying capacity attains the maximum for the history of the farm from the 13th to 16th year. From sixteen years onward carrying capacity and production per cow and per acre all

steadily fall, the reason most probably being that as the farms were originally bought at a reasonable price and the capital expenditure has been amortised, continued effort at high production is not demanded.

The object of the dairy farmer should be to secure a high carrying capacity of heavy producing cows from which a high butter fat production per acre necessarily results. It is however obvious that this must be achieved on an economic basis. The two management factors chiefly involved are heavy top-dressing and an adequate supply of labour, and an important part of the enquiry relates to the effects of these two factors. The correlation of heavy manuring with high production is positive, but as already shown high production farms carry a greater number of cows per 100 acres, so that the application per cow is less, even though heavy per acre. Moreover heavy manuring farms use actually less manure per pound of butter fat produced than do low production farms. This should be clear from a study of the following two tables.

TABLE IV. — *Manuring in relation to butterfat production.*

Group	Butterfat per acre range	Manure per acre average	Manure per cow average	Manure per pound of butterfat produced
	lb.	cwt.	cwt.	lb.
1.	151-170	2.06	5.6	2.1
2.	131-150	2.34	4.8	1.9
3.	111-130	2.42	5.5	2.3
4.	91-110	2.58	6.8	2.9
5.	71-90	1.88	5.6	2.6
6.	51-70	1.86	6.4	3.3
7.	50 and under	1.66	9.3	5.4

TABLE V. — *Manuring in relation to cow-carrying capacity.*

Group	Cows per 100 acres	Manure per acre average	Manure per cow average	Manure per pound of butterfat produced
		cwt.	cwt.	lb.
1.	55-59	1.88	3.3	1.29
2.	50-54	2.36	4.6	1.91
3.	45-49	2.22	4.8	1.97
4.	40-44	2.84	6.8	2.79
5.	35-39	2.36	6.3	2.67
6.	30-34	2.08	6.8	2.72
7.	25-29	2.04	7.6	3.21
8.	20-24	1.72	7.9	4.11

Expert grassland management is a fundamental part of farming technique in New Zealand, where in the North Island out of 12,000,000 acres under cultivation 95 per cent. is used for grazing. The fertilisers employed are mainly phosphates, the proximity of Nauru Island making it possible to place superphosphate on the market at comparatively low rates. The use of soluble nitrogenous fertiliser for forcing pasture is also being widely advocated. The result of a trial on a 50 acre farm in the North Island (Piako County) in 1927-1928 may be quoted as further illustrating Mr. Fawcett's conclusions in regard to the remunerative character of heavy top dressing. A standard dressing of 3 cwt. of superphosphate per acre was first given followed by additional applications of sulphate of ammonia to half the area and of superphosphate to the other half, the total cost of the additional fertilisers

being £50. From the subjoined table the increase in butter fat will be noted accompanied by an increase in cow carrying capacity. The additional 2,130 lb. of butterfat produced was worth £159 15s. at 1s. 6d. the lb. Actually the factory paid 1s. 8d. per lb. on cheesemaking (1).

TABLE VI. — *Increase in Production from Intensive Management.*

Season	Acreage	Number of fields	Number of Cows	Total Butterfat production	Butterfat per acre
				lb.	lb.
1926-27.	50	8	27	8,048	161
1927-28.	50	10	32	10,178	208.5
Increase in butterfat . . .				2,130	42.5

It may be added that the season 1927-28 was unfavourable so that even better results might be normally expected.

The relation of the labour utilised on a dairy farm to the production of butter fat is discussed by Mr. Fawcett and still more fully in the companion bulletin, "Dairy Farm Labour and its Relation to Butterfat Production" also issued by the Farm Economics Section of the Fields Division of the New Zealand Department of Agriculture. It should be noted that labour includes those members of the family who regularly assist on the farm together with any permanent hired help, and for purposes of classification all classes of labour are taken as equal, *i. e.*, a boy or a woman employed is considered as a unit, the same as an adult male. The process of milking is mechanised throughout New Zealand but stripping and general treatment, including the attitude adopted towards the herd, are of great importance, and a considerable amount of cleaning of the mechanised plant is entailed. In addition there is the farm-work as a rule mainly directed towards food production for live stock. On the average of all farms 2.2 units of labour are employed per 100 acres, milking 38.2 cows. A survey of 816 farms varying between about 200 and 100 acres gives the number of labour units as from 5 to 1 variously composed. It seems to be clear that the labour groups composed of two males with either one or two females obtained the largest return in butterfat per acre, the reason probably being that these groups have most available male hours per acre per day. It also appears that the addition of female labour is associated with increased production per cow, while the size of the herd and farm is very largely dependent on the number of males. The following conclusions are reached by Mr. Fawcett.

1. High per acre production is obtained on those farms having the greatest number of labour units available per 100 acres.
2. The number of cows milked per unit of labour is approximately constant throughout.
3. Butterfat production per unit of labour is high on those farms having the greatest number of units available per 100 acres.
4. High carrying capacity is definitely associated with high labour units.

(1) See WILD G. W. Nitrogenous Fertilising and Rotational Grazing of Pastures. *New Zealand Journal of Agriculture*, Vol. XXXVII. No. 6 Wellington, 20 December 1929. The application of soluble nitrogenous fertiliser is reported in some cases to have increased *fourfold* the carrying capacity of grassland. Heavier stocking is essential to keep the grass at its maximum food value, *viz.* the 4 to 5 inch "flush". The article states that in the season 1928-29 the number of cows was being increased to 42.

5. High herd averages are associated with high labour units.

He adds that intensive labour utilisation on farms of an economic area carrying the maximum number of high producing cows gives high gross returns, and results in increased net profit to the individual. Dairy-farming is in fact a system of land utilisation capable under proper management of producing a high gross return per acre associated with a high net return per unit of labour employed.

An important part of the enquiry relates to gross returns, maintenance and labours costs, and interest surplus. The following tables show the average distribution under these headings for the farms grouped according to butterfat production per acre, the results being given (a) per 100 acres, and (b) per cow.

TABLE VII. — (a) *Farm Accountancy Results per 100 acres.*

Butterfat per acre lb.	Gross return per 100 acres £	Maintenance costs		Labour (*) costs		Interest surplus	
	£	£	%	£	%	£	%
151-170	1,202.4	258.6	21.5	374.5	31.1	569.3	47.4
131-150	1,035.4	240.4	23.2	343.0	33.1	452.0	43.7
111-130	888.7	210.0	22.6	308.0	34.7	379.7	42.6
91-110	742.8	196.8	26.5	267.4	36.0	274.6	37.5
71- 90	607.0	174.9	28.8	236.6	39.0	195.5	32.2
51- 70	489.2	139.0	28.4	205.1	41.9	145.1	29.7
50 and under	295.1	106.6	36.1	138.6	47.0	49.9	16.9

(1) Labour costs are standardised at £7 per cow.

(b) *Farm Accountancy Results per cow.*

Butterfat per acre lb.	Gross return per cow £	Maintenance costs £	Labour costs £	Interest surplus £
151-170	22.48	4.83	7.0	10.65
131-150	21.13	4.90	7.0	9.23
111-130	20.20	4.56	7.0	8.63
91-110	19.45	5.15	7.0	7.30
71- 90	17.96	5.17	7.0	5.79
51- 70	16.69	4.74	7.0	4.95
50 and under	14.90	5.35	7.0	2.54

The following is a percentage analysis of maintenance costs for the farms grouped according to butter fat production per acre.

TABLE VIII. — *Items of Maintenance Costs in percentages of total costs.*

Butterfat per acre lb.	Topdressing %	Rates %	Fencing %	Cultivation %	Power %	Depreciation %	Sundries %
151-170	35.8	10.9	16.2	3.7	11.6	12.6	19.2
131-150	31.8	14.6	4.7	6.9	10.9	10.8	20.8
111-130	38.2	13.8	6.6	6.6	11.0	9.2	14.6
91-110	39.0	12.1	7.3	7.3	8.9	8.9	18.0
71-90	33.8	8.1	8.5	8.5	9.2	9.7	22.2
51-70	43.5	12.0	10.8	10.8	10.0	7.9	5.7
50 and under	44.8	10.7	6.5	6.1	7.0	8.6	17.0

It will be noted that manure for top-dressing is the most important item of maintenance, accounting on the average for approximately 38 per cent. of the total. Rates are a high charge in New Zealand. The actual costs of power are naturally high on heavy-producing farms. In the case of electricity the charge is made on a graduated scale of total butterfat produced or on a unit basis; if combustion engines are used, benzine consumption of course increases with the size of plant and length of milking. Power averages about 9.8 per cent. of total maintenance costs, or approximately 10s. per cow milked.

The average gross returns from farm groups are composed of the proceeds from butterfat, plus the balance of the pig and cattle accounts. It has already been stated that the herds are maintained from home-reared heifers, the buying in of cows being very rare. The replacement of bulls is an item of considerable importance.

The financial position on small areas is of interest and may be illustrated by the figures of a group of 50 farms, having an average of 57 acres, the butterfat average production per acre being 125.63 lb., cows milked per farm 25.5, butterfat per cow 280.4 lb.

The position may be stated as follows:

	£		£
To Maintenance expenses . .	138.5	By Butterfat returns at 1s. 4d. per lb. . . .	477.5
Labour at £7 per cow . . .	178.5	Pigs account	41.5
Interest surplus	217.00	Cattle account	15.0
	<u>534</u>		<u>534</u>

The interest surplus of £217 capitalised represents £3,100. The value of stock and plant of the farms average £605, leaving £2,495 as the value of the land and improvements, or £43 per acre. The average amount of mortgage held per farm was £1,500, hence the farming family capital was £1,600 with share of the interest amounting to £112, giving with wages, £178 10s., an income of £290 10s.

A Dominion estimate has recently been made (1), the area of a typical dairy farm being taken as 200 acres, the average number of cows on that area being 37 and the Dominion average for butter fat production per cow 200 lb. The financial position for such a typical farm is thus stated:

	£		£
To Maintenance or working expenses	260	Butterfat returns at 1s. 4d. .	493
Labour income	133	Pigs sold	80
Interest at 7 per cent.	280	Cattle, etc., sold	100
	<u>673</u>		<u>673</u>

It may also be of interest to compare the figures given per 100 acres for a group of 35 farms area varying from 50 to 300 acres situated in a district of high natural fertility (Piako County, North Island) on which a survey was carried out in 1926-27

(1) JENKS, J. E. F. Some Economic Aspects of New Zealand Dairy Farming. *Scottish Journal of Agriculture*, Vol. XII, No. 4, Edinburgh, October 1929.

by the Farm Economics Branch. The detailed results which were reproduced in the *International Review of Agriculture* of January 1928 may be summarised as followed.

	£		£
To Maintenance expenses	221	Butter at 1s. 4d. . . .	815
Labour Income	456	Pigs and cattle	92
Interest at 7 per cent.	230		
	907		907

Here the total average capital engaged per 100 acres was £3,264, number of cows per 100 acres 42, production of butterfat per cow 291 lb., and production per acre 122.20 lb.

The general conclusions are that the conditions contributing to prosperity in dairy farming are: 1. high production per acre; 2 adequate labour according to size of farm, such labour to be fully exploited; 3. sufficient capital to allow of development. It is indicated that dairying allows of a maximum density of rural population of a highly producing type per acre of land occupied.

* * *

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Terms used in Farm Accounting.

We give herewith, in eight other languages (Czech, Estonian, Hungarian, Italian, Polish, Rumanian, Serbian and Spanish,) the list of the main terms used in farm accounting, corresponding to the lists published in French, German and English in the issue of September 1929 of this *Review*. The original lists were reproduced from the report entitled "Terminology and Bases for an International Agricultural Statistic founded upon Farm Accounting", presented to the International Congress of Agriculture held at Bucharest in June last by Dr. Ernest Laur, Professor at the Federal Polytechnic School at Zurich and Director of the Swiss Peasants' Union. For purposes of comparison we repeat the English list.

We hope to be able to publish shortly lists of the corresponding terms in other languages.

SOME OF THE MAIN TERMS USED IN FARM ACCOUNTING

ENGLISH	ČESKÝ	ESTI
<i>Main results</i>	<i>Hlavní výsledky</i>	<i>Päätulemused</i>
1. Gross return	1. Hrubý výnos	1. Kogusaak
2. Farm expenses	2. Provozovací náklad	2. Käitiskulutus
3. Cost of production	3. Výrobní výlohy	3. Tootmiskulu
4. Net return (on total farm assets)	4. Čistý výnos	4. Puhtsaak
5. Taxable net return	5. Zdanitelný čistý výnos	5. Maksualune puhtsaak
6. Interest return on landlord's capital	6. Renta statková	6. Talundirent
7. Interest return on the land alone	7. Renta pozemková	7. Maarent
8. Profit (or loss) on total farm assets	8. Zisk (nebo ztráta) podniku	8. Puhtsaagivahe
9. Family farm earnings	9. Důchod zemědělský	9. Maatulunduslik tulu
10. Family capital return (or : Return on own capital)	10. Renta majetková (or : kapitálová)	10. Puhtvaranduseient
11. Family labour earnings	11. Výtěžek pracovní (zhodnocení práce) podnikatele a jeho rodiny	11. Ettevõtja ja perekonna tööpalk
12. Operator's labour earnings	12. Výtěžek pracovní (zhodnocení práce) podnikatele	12. Ettevõtja tööpalk
13. Operator's profit (or loss)	13. Zisk podnikatelský (nebo ztráta podnikatelská)	13. Ettevõtja kasu (ehk : kahju)
14. Social income	14. Důchod národohospodářský (sociální)	14. Rahvatulunduslik tulu.

Some auxiliary terms

Některá pomocná označení

Mõned abimõisted

15. Total capital invested (or : Farm assets)	15. Kapital aktivní	15. Tegevkapital (ehk : Aktivkapital)
16. Farm debts	16. Kapital pasivní (or : dluhy)	16. Võlakapital (ehk : Passivkapital)
17. Own capital (or : Family capital)	17. Čisté jmění	17. Puhtvarandus
18. Landlord's capital	18. Kapital statku	18. Talundikapital
19. Tenant's capital (or : Operating capital)	19. Kapital nájemce	19. Rentnikukapital
20. Field inventory	20. Polní inventář	20. Väljakapital
21. Supplies on hand	21. Zásoby	21. Tagavared
22. Farm produce on hand	22. Zásoby v závodě vyrobené	22. Talukäitise toodete tagavared
23. Cash receipts of farm	23. Peněžní příjmy závodu	23. Talukäitise rahalised sissetulekud
24. Contributions in kind from the farm	24. Hodnoty závodem vydané v naturáliích	24. Talukäitise ainelised jõudlused
25. Cash expenses for farm	25. Peněžní vydání závodu	25. Talukäitise rahalised väljaminekud
26. Contributions in kind to the farm	26. Hodnoty závodem přijaté v naturáliích	26. Talukäitise ainelised kulud (ehk : Talukäitise ainelised saamised)
27. Depreciation charge	27. Úmor	27. Kustutused (ehk : amortisatsioonid)
28. Taxes	28. Daně	28. Maksud
29. Interest paid on farm debts	29. Úroky z dluhů	29. Võlaprotsendid
30. Rents paid	30. Nájemné	30. Rent
31. Interest claim to be charged on the farm assets (or : on total capital invested)	31. Úrokový nárok kapitálů (or : kapitálu aktivního)	31. Tegevkapitali protsendinõudlus (ehk : Aktivkapitali protsendinõudlus)
32. Interest claim for own capital invested	32. Úrokový nárok čistého jmění	32. Puhtvaranduse protsendinõudlus
33. Wage claim for unpaid labour of the operator and his family.	33. Mzdový nárok (půdnikatele a jeho rodiny)	33. Ettevõtja ja perekonna palganõudlus.

*Főeredmények**Principali risultati.**Wyniki zasadnicze*

1. Nyershozam

2. Űzemköltség

3. Termelési költség

4. Tiszta jövedelem

5. Adóköteles tiszta jövedelem

6. Birtokjáraadék

7. Földjáraadék

8. Űzemi nyereség

9. Mezőgazdasági bevétel

10. Vagyonyjáraadék

11. Vállalkozó és családjának munkabérek

12. A vállalkozó munkabér ? keresete

13. Vállalkozói nyereség vagy veszteség

14. Nemzetgazdasági bevétel

1. Prodotto lordo.

2. Spese d'impresa (con esclusione dell'interesse dei capitali).

3. Costo di produzione.

4. Reddito capitalistico netto da imposte.

5. Reddito capitalistico imponibile.

6. Reddito fondiario.

7. Rendita fondiaria.

8. Profitto (o perdita).

9. Reddito netto dell'imprenditore agricolo.

10. Reddito netto capitalistico dello imprenditore.

11. Reddito netto di lavoro dello imprenditore e della sua famiglia.

12. Reddito netto di lavoro dello imprenditore.

13. Profitto (o perdita) dell'imprenditore.

14. Reddito globale o sociale dell'azienda.

*Néhány kiegészítő megnevezés**Alcuni termini ausiliari.**Niektóre pojecia pomocnicze*

15. Vagyon (Cselekvő tőke)

15. Attivo.

15. Kapitały czynne (or: Majątek czynny)

16. Teher (Szenvedő tőke)

16. Passivo.

16. Kapitały bierne (or: Majątek bierny)

17. Tiszta vagyon	17. Patrimonio netto.	17. Majátek czysty
18. Alaptőke (Ingatlan)	18. Capitale fondiario.	18. Kapitał nieruchomości
19. Üzem tőke	19. Capitale agrario.	19. Kapitał ruchomy
20. Mezei leltár	20. Anticipazioni culturali.	20. Inwentarz polowy
21. Készletek	21. Scorte.	21. Zapasy
22. Gazdaságban termelt készletek	22. Scorte prodotte nell'azienda agricola.	22. Zapasy wyprodukowane w gospodarstwie
23. Gazdasági üzem készpénzbevételei	23. Entrate in danaro dell'azienda agricola.	23. Dochód gotówkowy gospodarstwa
24. Természetbeni szolgáltatások a gazdaságból	24. Prestazioni in natura dell'azienda agricola.	24. Świadczenia gospodarstwa w naturaljach
25. Gazdasági üzem készpénz kiadások	25. Spese in danaro per l'azienda agricola.	25. Rozchód gotówkowy gospodarstwa
26. Természetbeni szolgáltatások a gazdaság részére	26. Prestazioni in natura fatte all'azienda agricola.	26. Świadczenia w naturaljach na rzecz gospodarstwa
27. Törlesztés	27. Ammortamenti.	27. Umorzenie (or : Amortyzacja)
28. Közterhek	28. Imposte.	28. Podatki
29. Adósságkamat	29. Interessi dei debiti.	29. Odsetki od długów (or : Procenty od długów)
30. Haszonbér	30. Canoni di affitto.	30. Czynsz dzierżawny
31. Vagyon kamatigénye vagy (a cselekvő tőkéé)	31. Interessi dei capitali.	31. Oprocentowanie umowne kapitałów czynnych w produkcji
32. Tiszta vagyon kamatigénye	32. Interessi del patrimonio netto.	32. Oprocentowanie umowne czystego majątku
33. Munkabér igény (a gazdálkodó és családjának).	33. Equa retribuzione dell'imprenditore e della sua famiglia.	33. Wynagrodzenie umowne za prace przedsiębiorcy i jego rodziny

ROMÂNESTE

Rezultatele principale

1. Venit brut (Produs brut)
2. Cheltuielile exploatației
3. Costul de producție
4. Venit net
5. Venit net impozabil
6. Renta exploatației
7. Renta solului
8. Diferența de venit net
9. Venitul agricol
10. Renta averii nete
11. Produsul muncii (Familiei)
12. Produsul muncii întreprinzătorului
13. Câștigul (sau. pierderea) întreprinzătorului
14. Venit social (sau venit economic)

Cătiva termeni auxiliari

15. Activul (Capital activ)
16. Pasivul (sau Datorii)

SRBSKI

Glavni podaci

1. Bruto prihod
2. Gospodarski utrošak
3. Proizvodni troškovi
4. Čisti prihod
5. Čisti prihod podvrgnut oporezovanju
6. Posjedovna renta
7. Zemljišna renta
8. Diferencija čistog prihoda (dobitak ili gubitak gospodarstva)
9. Gospodarski dohodak
10. Imovinska renta
11. Zarada (poduzetnika i njegove familije)
12. Zarada poduzetnika samoga
13. Poduzetnička dobit (ili gubitak)
14. Narodno gospodarski dohodak

Neki pomoćni nazivi

15. Aktivni kapital
16. Pasivni kapital (ili dugovi)

ESPAÑOL

Principales resultados

1. Producto bruto
2. Gastos de explotación
3. Coste de producción
4. Rendimiento líquido
5. Rendimiento líquido imponible
6. Renta dominical (or : Renta fundiaria)
7. Renta territorial (or : Renta)
8. Margen diferencial del rendimiento líquido
9. Rédito agrícola neto
10. Rédito del capital neto
11. Producto del trabajo (del agricultor y de su familia)
12. Producto del trabajo del agricultor
13. Beneficio (o pérdida) del agricultor
14. Rédito social (or : Producto neto)

Algunos términos auxiliares

15. Activo (or : Capital activo)
16. Pasivo (or : Deudas)

17. Avere netă	17. Čista imovina	17. Capital neto
18. Capitalul fondiar (sau capitalul exploatației)	18. Kapital imanja	18. Capital-dominio (or: Capital fundiario)
19. Capitalul de arendaș	19. Zakupnički kapital	19. Capital de ejercicio
20. Inventarul de câmp	20. Poljski inventar	20. Avances a los cultivos (or: Anticipos a los cultivos)
21. Provizii	21. Zalihe	21. Provisiones
22. Provizii produse în exploatație	22. Zalihe vlastite proinvođnje	22. Provisiones producidas en la explotación
23. Incasările exploatației	23. Primitci gospodarstva u gotovu	23. Ingresos de la explotación, en numerario
24. Prestațiile exploatației	24. Naturalne činidbe gospodarstva	24. Prestaciones de la explotación, en especie
25. Plățile exploatației.	25. Izdaci u gotovu za gospodarstvo	25. Gastos para la explotación, en numerario
26. Prestațiile pentru exploatație	26. Naturalne povlake gospodarstva	26. Prestaciones a la explotación, en especie
27. Amortismente	27. Amortizacija	27. Amortizaciones
28. Impozite	28. Porezi	28. Impuestos
29. Intesele dobânzilor (Dobânda Dobânzilor)	29. Dugovni kamati	29. Interés de las deudas
30. Arenzi	30. Zakupnina	30. Arrendamientos
31. Dobânda capitalului activ	31. Kamati na kapitalija (ili na aktivni kapital)	31. Servicio de intereses de los capitales (or: del total activo)
32. Dobânda averii nete	32. Kamati na vrijednost čiste imovine	32. Servicio de intereses del capital neto
33. Indemnizație de salar pentru membrii familiei.	33. Naplata za rad gospodara (poduzetnika) i njegove familije.	33. Retribución equitativa del agricultor y de los miembros de su familia.

AGRICULTURAL LEGISLATION

Summary of laws and regulations.

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The organs of the Confederation are : the National Council, the Confederation Board and the President. Its constitution further contemplates the constitution of a higher technical and economic Council which constitutes the consultative body of the Confederation. The capital of the Confederation is composed of movable and immovable property, of money, etc., acquired or presented to the Confederation, of sums destined for the reserve fund of the Confederation Board, as well as of the compulsory reserve fund contemplated by the law of 3 April 1926.

The income of the Confederation is composed of compulsory and supplementary contributions, by the quota of the guaranty fund contemplated in art. 5 of the above mentioned law, by interests bank deposits and gifts. The measures concerning the administration of the capital belonging to the Confederation as well as its income shall be specified in special regulations to be issued later. Its financial year commences on 1 July and finishes on 30 June. The budget which must be voted by the Confederation Board must be approved by the National Council and the balance sheet which must be drawn up within three months at latest of the close of the financial year must be submitted to the approval of the auditors appointed by the National Council].

ITALY. — Decreto ministeriale. Nuove norme speciali tecniche per l'esportazione dei cavolfiori. — 14 settembre 1929. — *Gazzetta Ufficiale*, n. 225 (27 settembre 1929).

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INTERNATIONAL REVIEW OF AGRICULTURE

PART II

MONTHLY BULLETIN

OF

AGRICULTURAL ECONOMICS AND SOCIOLOGY

LAND SYSTEMS

Agrarian Reform in Poland.

In continuation of the publication of the official reports which have reached the International Institute of Agriculture, in reply to its enquiry on the post-war agrarian reform in Central and Eastern Europe, a report is here given in reference to Poland, the largest of the countries in which a reform of this nature has been carried out. This article has been received from the Polish Ministry of Agriculture, and contains the fullest possible information, enabling the reader to form an exact idea of the organisation of this reform, and of its results in Poland. Those interested in the subject will find in Nos. 7, 8, 9, 10, 11, and 12 of the 1929 issue of this Review information on the same subject in respect of Finland, Lithuania, Latvia and Austria.

I. — CAUSES OF THE AGRARIAN REFORM.

The population of Poland has increased on the average by 94 per cent. (1) during the period extending from 1860 to 1910, with the result that there is a surplus agricultural population in nearly all provinces. The number of persons whose occupation is agriculture is 75 per square kilometre in the southern voivodes, 46 in the western, and 28 in the eastern voivodes (2), these last as a rule having unfavourable climatic conditions, poor lands and a considerable proportion of forests and waste land. The corresponding figures are for France 31, for Germany 33, and 34 for Denmark (6). On an average, according to the general census of 1921 (4), two-thirds of the population of Poland are engaged in agriculture, or 64.3 per cent., whereas this percentage is 30 per cent. in Denmark, and 27 per cent. in Germany, according to the census of 1907 (5). The surplus population of Poland is a phenomenon connected with the backward industrial development of the country (in 1921 only 14.9 per cent. (6) of the population were engaged in industry, mining and various trades), with defects in the farming system (easements, enclaves), and with the low

(1) Dr. A. ROSÉ. *Le problème agraire en Pologne.*

(2) Calculation made by the Ministry of Agrarian Reforms on the basis of the general census of 1921.

(3) Dr. A. ROSÉ. *Le problème agraire en Pologne.*

(4) General Census of 1921.

(5) and (6) Dr. BUZEK. *Le programme économique de la République.*

level of agricultural production. This last is in itself the result of the state of things already described, as well as of the unfavourable credit conditions which render extremely difficult all attempt at intensive farming and land improvements.

On the other hand, in the XVIIIth century, the loss of the independence of Poland, the passing of the country under the domination of three different States as well as the failure of the countries partitioning Poland to give attention to the development of agriculture, have resulted in an extremely low level of rural prosperity, and, in consequence, in a somewhat marked condition of social tension (see the work of Prof. W. Staniewicz "Sur le programme agraire et son exécution en Pologne". Warsaw, 1928, pages 171 and following).

The events of the war also contributed to the same result. Military operations were carried on over the territory of Poland, from 1914 nearly to the end of 1920. During this period, the division of landed property was practically completely checked, land improvement became impossible, while reparaelling, abolition of easements, exchange of lands and division of agricultural communities were suspended.

By the end of the war, there was disorganisation of the railways, decay in industry and urban life, while the emigration to the United States of America (1), which had previously reached a yearly figure of approximately 250,000, and the seasonal migration of farm labour into Germany, Sweden and Denmark, which had brought this figure up to 800,000 yearly, were both seriously checked.

In the absence of, or with only inadequate supplies of, chemical fertilisers, farm machinery and live stock, the productivity of the soil was lessened to a disastrous extent. As is shown by the general census of 1921, Poland possessed, out of a total of three and a quarter millions of farms, more than two millions of farms of an extent of less than five hectares, that is to say, an area insufficient for an independent farming unit. The area of these farms was rather less than 15 per cent. of the total area of the rural holdings. In these conditions, the rural population desired to satisfy its land hunger, and the result was the agrarian reforms decreed by the laws of 15 July 1920, 17 December 1920 and 25 December 1925.

II. — LEGAL BASES OF THE AGRARIAN REFORM.

Poland has no agrarian code, on which to base reconstruction of the agrarian system, although one is now in process of preparation. At the present time there is in force a series of agrarian laws for the execution of the reform, the most important of which is that of 28 December 1925 (*Law Gazette of the Polish Republic*, 1926, No. 1, text 1). By this law which is of the nature of a general enactment, the bases of the subsequent agrarian legislation have been laid, the method of proceeding to the projected reforms being defined in detail; and a whole series of executive measures have already been enacted.

It was intended by means of a reconstruction of the agrarian system in the sense in which it was understood by the law of 28 December 1925, to establish farms on sound lines suitable for production on a considerable scale, of varied size and type, and based on the principle of private property. For this purpose the law provided for the formation of new holdings as well as for the enlargement of the smaller, or dwarf, existing holdings; and it also ensured to centres of predominantly agricultural and horticultural cultivation the necessary lands.

The following is the procedure for parcelling of lands: the Council of Ministers

(1) Dr. BUZEK. *Le programme économique de la République.*

fixes the quota, that is to say, the total quantity of land on which parcelling is to be effected annually, viz., a quota of 200,000 hectares for each of the successive ten years counting from 1926. The next step is for the Council of Ministers to establish, on the proposal of the Minister of Agrarian Reforms, the parcelling scheme, or a tabulated scheme of all the lands, which, within the limits of this quota, have to be parcelled in the different districts (*arrondissements*) of Poland. When the quota for parcelling in any one year has not been dealt with unofficially in that year, then the Council of Ministers establishes within the limits of the scheme a detailed list, or list giving the names of the estates intended for expropriation, assigning to the owner in each case a definite time in which to proceed to the unofficial parcelling of the lands included on the list.

The agrarian reform includes besides: consolidation of holdings and the abolition of easements, the splitting up of the agricultural communities and the regulation of the use in common of their lands, at the same time as the grant of lands to tenants on long lease, or the so-called "free men" and to feudal tenants, the protection of the small rural tenants, matters relating to land settlement by ex-service men, etc. The fundamental enactments forming the bases of these reforms are: the law of 31 July 1923 on the consolidation of lands, a law which was amended several times and which has at the present time full force in the form published in the *Law Gazette of the Polish Republic*, 1927, No. 92, text 883, the laws of 7 May, 1920 and of 10 January 1922. These laws were afterwards replaced by the decrees of the President of the Republic having the force of law and dated 1 February 1927 on abolition of servitudes, which were published in the *Law Gazette of the Polish Republic* 1927, No. 10, texts 74 and 75, by the law of 20 June 1924 having for object the concession of lands to former feudal tenants, former "free men", and to the tenants on long lease in the Eastern voivodes, this law appearing in the *Law Gazette* 1924, No. 63, text 617; by the law of 31 July 1924 on the protection of small tenant farmers (*Law Gazette*, 1924, No. 75, text 741), which was first introduced by the law of 3 July 1919 (*Law Gazette*, No. 57, text 345) and had full force up to 1 October 1920; also by the law of 17 December 1920, relating to the grants of lands to soldiers of the Polish Army (*Law Gazette*, 1921, No. 4, text 18), and further by a series of laws and ordinances, either enacted by the Polish authorities, or originating during the period of division of lands.

The principle of the law on consolidation of land holdings is that the initiative for any consolidating action must be taken by the population itself, on the proposal of interested parties owning at least 25 hectares of lands requiring consolidation and situated in the administrative area indicated, although the actual consolidation is carried out by the Land Offices, in the same way as in the case of the consolidation scheme being drawn up by these Offices. The possibility is anticipated of forcibly incorporating in the area for consolidation lands in respect of which the owners have not given support to the consolidation scheme. Consolidation may be officially effected in the course of the execution of other agrarian regulating measures, as for instance, at the time of the establishment of a scientific forestry working on the territory.

The abolition of servitudes is also based on the principle of the private initiative of interested parties, of superintendence by the Land Offices, and of a amicable arrangement between the parties; however abolition of servitudes may be effected officially in the course of the execution of other agrarian regulating measures imposed on the lands already indicated, and official action is also taken in respect of such servitudes as shall not have been abolished by agreement up to 1 January 1930.

The law of 20 June 1924 on the granting of lands makes it possible for persons, who for a series of years, or even of generations, have had the use of such lands, to present themselves for the purpose of obtaining the grant of the lands, but only, however, when an amicable agreement approved by the authorities has been prescribed as the form for regulating these questions. In the case in which such agreement is not established the grant may be proceeded with officially.

Execution of the agrarian reform is the work of special administrative bodies, the powers of which are fixed by the law of 11 August 1923 on the functions of the Minister of Agrarian Reforms and on the organisation of Land Committees and Land Offices (*Law Gazette of the Polish Republic*, No. 90, text 706), amended by the ordinance of the President of the Republic dated 15 July (*Law Gazette*, No. 68, text 598). Such execution is entrusted to the Minister of Agrarian Reforms, to which are subordinated as executive bodies the regional Land Offices, and to them in turn the district land offices. At the regional Land Offices the regional Land Committees function as bodies for making regulations and giving advice; appeal may be made from the decisions of the regional Land Committees to the Central Land Committee, functioning at the Ministry. Special estimates committees function at the regional Land Offices, for the purposes of giving opinions on the value of expropriated estates and to carry out similar duties in connection with estimates.

While consolidation is in progress and at the time of abolition of servitudes, special estimates committees, consisting of experts with a surveyor as chairman, or as the case may be the Land Commissioner, are formed and are known as special committees for estimation of easement values. These committees prepare schemes for abolition of easements which are submitted to the regional Land Committee for approval.

In addition, for questions relating to land grants, there are attached to the district Land Offices special committees for the assignment of lands. Appeal may be made against the decisions of these committees to the regional Land Committees. District land grant committees deal with questions in connection with the land settlement of ex-service men, and appeal may be made from these to the Appeal Committee for questions relating to land settlement of ex-service men.

The rural population is represented on these committees in the following manner:

(a) Central Land Committee (art. 5 of the law of 11 August 1923 *Law Gazette of the Polish Republic*, No. 90, text 706). The Minister of Agrarian Reforms is ex-officio the chairman of the Central Land Committee, the vice-chairman of the same Committee acting as deputy; in addition the following are members: a judge of the Appeal Court, appointed by the Minister of Justice, a delegate of the Minister of the Interior, with higher legal qualifications, a delegate of the Minister of Agriculture, who must possess an advanced knowledge of agricultural subjects, a delegate of the Minister of Agrarian Reforms, as well as two representatives of small holders, a representative of farm workers not possessing land, a representative of large estates, all appointed by the Diet on the proposal of the Agrarian Committee of the Diet.

(b) Regional Land Committee (art. 14 of the law of 11 August 1923, *Law Gazette of the Polish Republic*, No. 90, text 706).

The chairman of the regional Land Office in his capacity as president of the voivode, or as an official of the voivode, a district magistrate, an official appointed by one of the offices attached to the Ministry of Agriculture, an official appointed by the regional Land Office, as well as two representatives of small holders, two representatives of farm workers not possessing land, one representative of large estates,

appointed by the Minister of Agrarian Reforms from among the candidates presented by social and vocational organisations.

(c) Committees for deciding on the quality and value of lands (art. 28 of the law of 28 December 1925 and 5 of the decree of the Minister of Agrarian Reforms dated 27 June 1927. (*Law Gazette of the Polish Republic*, No. 70, text 616)).

These committees consist of one representative in each case of the Ministers of Agrarian Reforms, of Finance and of Agriculture, and of sworn experts appointed, one by the representatives of large estates, one by those of the small holdings, and one by the landless farm workers.

(d) The Estimates Committee prescribed by the law of 31 July 1923 on consolidation of holdings consists of a surveyor, who may be the Land Commissioner, acting as chairman, and of experts appointed by the Consolidation Councils, which are elected by those concerned in the consolidation operations, in other words by the interested section of the population from among the persons concerned.

(e) The Committee for estimation of servitudes, as prescribed by the Decree of the President of the Republic dated 11 February 1927 (*Law Gazette of the Polish Republic* No. 10, texts 74 and 75) is composed as follows: chairman, the Land Commissioner; members, one representative of each of the parties, appointed by these parties from among the persons concerned.

(f) The Land Assignment Committee (art. 7 of the law of 20 June 1924, *Law Gazette of the Polish Republic* No. 68, text 671) has as chairman the Land Commissioner; as members: a magistrate, a representative of the *Starostic* Office, a representative of the large estates, a representative of small tenant-farmers.

(g) District Committees for land grants (art. 7 and 8 of the law of 17 December 1920 relating to the transfer to the State of land property (*Law Gazette of the Polish Republic*, 1921, No. 4 and the law of 16 August 1923, *Law Gazette*, No. 92, text 725)).

Chairman, the Land Commissioner; members, the representatives of the Ministers of Agriculture, of Justice and of War, as well as two representatives of the farmers of the locality, one of small holdings and one of large estates, with right to speak but not to vote.

In accordance with the law of 28 December 1925, the following lands have been brought under the agrarian reform: the lands situated outside the administrative areas of the towns, with the exception of forests, with area exceeding 30 or in some cases 50 hectares; sheets of water and pools liable to become dried up of more than 3 hectares in extent; in some cases other waters used for pisciculture or for industry and of more than 20 hectares in extent:

(a) State lands;

(b) lands known as "mortmain" lands belonging to ecclesiastics, churches, etc. in accordance with the agreement made with the Holy See (*Law Gazette of the Polish Republic*, No. 47, text 324);

(c) real property in land belonging to non-Catholic religious bodies and communities;

(d) lands belonging to foundations and other public institutions with the exception of the lands of self-governing institutions, provided that the State shall have ensured the accomplishment of the objects proposed by such scientific foundations or institutions;

(e) private lands and those belonging to self-governing institutions with the exception of orchards, high roads and lands with buildings except for such as are indicated as excluded in (a) and (b) of the first part of art. 4 of the law of 28 December 1925 on the execution of the agrarian reform. By these clauses lands excluded from

expropriation are : in suburban and industrial districts lands of which the area is not more than 60 hectares ; property situated in the rest of the territory of Poland, up to 180 hectares ; in the East of Poland, however, in the case of persons whose forefathers brought the land under cultivation on the territories of the Republic before 1 January 1864, the limit is 300 hectares. As provided in article 5 of the law above mentioned, exception must be also made in the case of lands required for maintaining at a suitable level both the cultivation and the land improvements of farms on which seed production or stock breeding are carried on exclusively, farms which in the region in question are distinguished by the intensity of their production, as well as farms of a highly industrialised type. The total area of lands to be so excluded on the grounds enumerated is not to exceed 550,000 hectares (art. 5 of the law relating to the execution of the agrarian reform) ;

(f) the lands which have been parcelled without reference to the laws ;

(g) lands leased without authority in separate lots for a period exceeding 6 years ;

(h) landed property acquired under certain conditions established by the former partitioning States with special prejudice to the Polish population ;

(i) real property acquired by deputies and senators during the exercise of their mandate, in contravention of art. 22 of the Constitution ;

(j) real property of absentees, which falls under the wardship of the State, if the absence of the owners dates from before 1 January 1922.

The law of 28 December 1925 relating to the execution of the agrarian reform is founded on the principle of voluntary parcelling of lands constituting private property and on that of the parcelling of State lands and public institutions, as also of private estates purchased or acquired by amicable arrangement for the purpose of parcelling by the Ministry of Agrarian Reforms. Expropriation may however be applied.

In accordance with art. 12 of the law relating to the execution of the agrarian reform, the Council of Ministers, on the proposal of the Minister of Agrarian Reforms, establishes the parcelling scheme which fixes for the different districts the quantity of land which is to be subjected to parcelling. If the parcelling of these areas is carried out voluntarily then compulsory expropriation need not take place.

In view of the fact however that on the whole lands have been voluntarily parcelled, in accordance with the parcelling schemes and with the detailed lists relating to the schemes, and that relatively few owners have not taken cognisance of the detailed lists published, there has been no necessity for compulsory expropriation except as regards a very limited area.

In accordance with the last sentence of the first part of art. 19 of the law on the execution of the agrarian reform, in regard to the application of this reform to private estates, a certain order was observed in drawing up the lists referred to, and especially the larger estates were placed before the smaller ones. The decree of the President of the Republic of 13 January 1928 has repealed this provision.

The parcelling scheme for the year 1927 (Decree of the Council of Ministers of 13 January 1926, *Law Gazette of the Polish Republic*, No. 7, text 42) covers the lands of the State and of the State Agricultural Bank for an area of 80,000 hectares and private lands for an area of 120,000 ha. ; the parcelling scheme for 1928 (Decree of the Council of Ministers of 5 January 1927, *Law Gazette of the Polish Republic*, 1927, No. 6, text 34) covers State lands and lands of the State Agricultural Bank for an area of 100,500 hectares and private lands for an area of 99,500 ha. ; finally the parcelling scheme for 1929 (Decree of the Council of Ministers of 13 February 1928, *Law Gazette of the Polish Republic*, 1928, No. 15, text 115), taking into consideration the decrease in the State land reserve, covers only an area of 40,000 hectares of

State lands and of the State Agricultural Bank, and 160,000 hectares of private lands.

The Land Offices may, moreover, in accordance with art. 15 of the law relating to the execution of the agrarian reform, submit to compulsory parcelling such private lands as shall be essential for the enlargement of the very small village holdings which are to be consolidated.

With the exception of lands which are the property of urban communes and are situated within the administrative areas of the towns, all public lands are subject to the agrarian reform. In this reform measure no provision is made for assigning these lands to any particular purpose. Lands utilised in common are in principle liable to be divided between the members of the group holding them, or are set aside for local objects of public utility.

Servitudes existing on expropriated lands, as occurs in former Russian Poland only, are abolished either by an amicable agreement or by compulsion.

In accordance with the provision of part 3 of art. 18 of the law of 28 December 1925 relating to the execution of the agrarian reform, as well as with the provisions of art. 30, first part, para. c of the Decree of the President of the Republic, dated 1 February, 1927, relating to abolition of servitudes, the regional Land Office takes part *ex-officio* in abolition of servitudes affecting landed estates which, according to the parcelling scheme of the year in question, are liable to expropriation. In this way all that can be subjected to expropriation is that part of the estate affected by servitudes, which shall be left over after there has been carved out the portion compensating for the servitudes that have been abolished, independently of the exceptions indicated in art. 4 and 5 of the law of 28 December 1925 (*Law Gazette of the Polish Republic*, 1927, No. 8, text 66). However if the compensating portion for the servitudes on agricultural lands has not been carved out of the landed property before decision of expropriation of the estate has been pronounced, the regional Land Office will deduct from the total expropriation sum the value of the servitudes which are a charge on the estate in question, after taking into consideration the opinion of the committee of Land Classification and Valuation. The value of servitudes is established in accordance with principles applied in the course of abolition of servitudes by compulsion on the lines of the Decrees above indicated of 1 February 1927 (art. 27, part 5 of the law of 28 December 1925 and of paragraph 48 of the Decree of the Minister of Agrarian Reform, of 7 December 1926). In other words, the value is established by agreement, if an amicable arrangement has been made by the parties as to the conditions of abolition of servitudes, or on the basis of a formal valuation report, either by the capitalisation of the annual value of the legal profits resulting from the servitudes, a value established on the basis of average current prices in the region in question for the period of the two past years, or by the determination of the value of the compensation calculated according to the rules prescribed in the decrees already mentioned of 1 February 1927.

In the course of the first years of the post-war agrarian reform, a fairly considerable proportion of the parcelled lands was set aside to constitute the new farm holdings, and a relatively less important area was devoted to the enlargement of the very small holdings. The adoption of such a proportion was due partly to inadequate knowledge of the real quantity of land available for utilisation for the purposes of agrarian reform, and partly to agitation on the part of the poorer classes of agricultural workers for holdings of their own. As time went on, more accurate knowledge was gained and calm was reestablished and as the statistical data show, the proportion of lands intended for enlarging excessively small holdings has con-

siderably increased. The results of this state of affairs is made clear by the following table :

Percentage of parcelled lands intended for

1919	61.4	23.9	14.7
1920	51.3	33.4	15.3
1921	56.3	28.2	15.5
1922	58.0	27.0	15.0
1923	54.0	34.0	12.0
1924	45.3	40.8	13.9
1925	50.2	38.2	11.6
1926	47.2	41.1	11.7

The enlargement of holdings in Poland takes place in connection with the extremely small (or dwarf) holdings, *i. e.*, holdings on which the amount of land is inadequate, and which are the private property of their holders, and it is contemplated to transform these holdings into farm lots suitable for a scientific production, still remaining the private property of their holders. There is no necessity to alter this method of holding for that never changes.

Purchasers of lots may be persons of Polish origin the main occupation of whom is agricultural or horticultural production, or persons who have shown that they have the necessary theoretical qualifications to manage properly an independent holding.

Educational preparation is not indispensable for an applicant for lands, provided there is a small capital either in ready money, live stock or implements. Persons wishing to obtain land resulting from parcelling carried out by the State have only to pay very small sums on account, not more than from 5 to 10 per cent. of the valuation price, and for the balance, a long term credit is allowed. Those who desire to obtain land resulting from private parcelling may apply to the State Bank of Agriculture for credits the total of which may reach two-thirds of the valuation price as fixed by the Bank. On the other hand it is essential for such persons to prove that they possess a theoretical and practical knowledge of agriculture. Persons who have been sentenced by the courts for desertion, and persons who have served sentences of two years or over for offences against the State, forfeit the right to acquire lands.

At the time of the parcelling the group of persons to receive the first consideration as purchasers are the farm servants who have been deprived of their occupation. Subsequently the parcelled lands have to be mainly devoted to the enlargement of the very small holdings, next to the enlargement of other small holdings, and to the formation of holdings for landless persons. Among persons however possessing similar occupational and economic qualifications and belonging to any one of the groups of purchasers, applications must be taken in the following order of priority :

- (a) tenant farmers and persons employed on the property which is being parcelled ;
- (b) ex-service men of good record and disabled men of the Polish Army as well those who belonged to any of the Polish volunteer corps ;
- (c) families, that is to say, the widows and orphans of men of the Polish Army or belonging to the various Polish volunteer corps ;

(d) students who have passed the final examinations of the schools of agriculture and horticulture ;

(e) Polish emigrants who have been obliged to leave foreign countries for political reasons.

Rural artisans have obtained and continue to obtain lands during the progress of parcelling, but their lots may not exceed 2 hectares in extent.

Under art. 52 of the law of 28 December 1925 it is provided that purchases of agricultural and horticultural holdings may be made by co-operative societies members of which conform to the conditions required of purchasers of holdings of the kind. The area of holdings assigned to co-operative societies may not exceed the limits fixed for holdings formed for individuals.

As regards protection of persons permanently dependent in connection with expropriated lands, the following provisions have been made :

(a) Tenancy agreements relating to lands subjected to parcelling are dissolved on 1 April, independently of the period fixed in the agreement, if the landlord has served notice on the tenant at least one year before the above date.

If in the tenancy agreement it is stipulated that compensation is due to the tenant in the case in which the agreement be dissolved before the expiration of the lease, such conditions must be complied with. If however the agreement does not provide for compensation, the tenant has a claim to repayment of cultivation and sowing costs for work carried out in the course of the last year of the tenancy, but only in the case of his not having been expected, in accordance with the conditions of the agreement, to carry out such operations during the last year preceding the expiration of the agreed period of tenancy. In addition the tenant has a claim to compensation for work which has been of benefit to the farm the value of which has not been amortised, as well as for the loss of profit he has incurred owing to not having had the advantage of the full term of the tenancy. The final transfer to the landlord of the area in respect of which the agreement has been dissolved must take place on the day of the dissolution of the agreement. The tenant has however the right to use the farm dwelling house and such farm buildings as are essential to the preservation of his stock etc. for three months counting from the day of the dissolution of the agreement.

(b) Interests of farm workers who have lost their employment in consequence of the parcelling of private lands, whether the operation has been carried out by the owners or by the Land Offices, are ensured in the first place by the priority accorded them for the purchase of the parcelled lands (art. 45 and 65 of the law on the execution of the agrarian reform, on specially favourable credit conditions (art. 72-74 of the same law). Farm workers who have worked with the present owner of the farm estate which is being parcelled or on the farm estate for more than 10 years, have, in the case of their refusal to purchase parcels, the right to obtain compensation from the owner of the lands so parcelled. The amount of this compensation depends on the number of years of service. Workers who have been employed for a period of from 10 to 25 years have the right to obtain 500 zloty, those who have been employed more than 25 years have a claim to compensation consisting either of a quota corresponding to ten times the value of the yearly instalments granted, in accordance with the laws or with local usage, to pensioned-off workers, or, in default of such provision, of a quota corresponding to yearly allowances in kind, multiplied by 2 $\frac{1}{2}$, such quota corresponding to the value of 100 to 130 quintals of rye or nearly.

The following table shows the average area of the independent holdings formed

in the course of parcelling, as well as that of the enlarged holdings, in the different districts of the Land Offices for the period from 1919 to 1926 inclusive :

On the territory of the regional Land Office of	Area of an independent farm holding — ha.	Area of an enlarged farm holding — ha
Warsaw	10.2	4.4
Piotrków	7.9	2.6
Kielce	6.1	2.0
Lublin	8.7	2.9
Białystok	10.4	3.1
Wilno	15.6	2.9
Grodno	11.0	2.3
Brzesc (Brest-Litovsk)	14.9	4.0
Luck	9.0	2.2
Katowice	8.9	1.6
Lwów	6.8	1.4
Cracow	8.9	1.4
Katowice	4.4	2.1
Poznań (Posen)	12.3	2.8
Grudziadz (Graudenz)	13.3	4.0
Average area in hectares . . .		
	9.4	2.3

There is no regular area fixed in advance for enlarged or newly formed holdings. The area of these is determined in accordance with the natural and economic conditions of the land in question, as well as in accordance with the number and qualifications of the purchasers.

In the law, however, it is provided that the enlarged holdings, as well as those that have been recently formed, may not exceed 20 hectares, This figure is increased to 35 hectares in the eastern voivodes, the voivode of Białystok and of Pomerania and in the mountain districts. Horticultural and market garden holdings may not exceed 5 hectares, while the limit for parcels of rural artisans, is 2 hectares, and for parcels for employees, etc. in the vicinity of towns and industrial centres is one hectare. In determining the area of agricultural holdings both newly formed and enlarged, consideration must be taken of the fact that the farm holdings formed should be in the given circumstances self-sufficing and suitable for intensive production, and also adequate for the maintenance of an average family of five persons of varying ages and sex and for supplying them with occupation.

The area of the holdings formed depends on :

- (a) the quality of the soil and the type of the farm holding ;
- (b) the general economic conditions of the region, such as the degree of industrialisation, the density of the population, the distance from market outlets, i. e. from towns and other important population centres, distance from railway stations, the state of the means of communication, etc. ;

(c) the possibility of finding occupation and subsidiary work on the spot or on the neighbourhood ;

(d) the individual capacities, vocational education, the number of the family and the economic resources of the different applicants for land purchase.

At the time of fixing the area of additional parcels, assigned for purposes of enlargement of existing farm holdings, there is also taken into consideration :

(a) the area of the existing farm holdings which are to be enlarged ;

(b) the area which will be added to the holding, whether as a consequence of the abolition of servitudes or in consequence of the regulation of the utilisation of lands held in common.

The area adjudged to the purchasers of parcelled lands depends, *inter alia*, on the work capacity of their families.

As regards the funds earmarked for the execution of the agrarian reform, the budget of the Ministry of Agrarian Reforms for the year 1927 includes the following headings :

Ordinary expenditure	31,624,942 zloty
including :	
administration expenses	7,580,392 zloty
expenses of parcelling and land settlement, incl. credit assistance	12,448,050 »
operations of getting land into order	11,596,500 »
Extraordinary expenditure (parcelling and land settlement)	4,865,200 »
Total (1)	36,490,142 zloty
Ordinary receipts	1,513,025 »

When the sums expended for the objects contemplated by the agrarian reform are examined, the sums expended on what is known as the working fund of the agrarian reform have to be taken into consideration. This fund has been in existence since 1922 and is based on a piece of financial legislation. From this fund the work of parcelling is paid, lands are bought, and farms are improved. In this way the expenditure on the execution of the agrarian reform was met as much out of the budget as from this fund, and the sums coming from these two sources determine the real expenditure incurred for such purposes. The assets of this fund consist in State lands, transferred to the Ministry of Agrarian Reform, or purchased by this Ministry, as well as all the dues resulting from the parcelling of State lands. This fund is earmarked for the perpetual creation of a land reserve and for the improvement of farm holdings. Once the business of parcelling is over, the credit side of the fund will be earmarked for the restoration of agriculture. The sums received as interest on the value of lands transferred to the agrarian reform operations will be placed

(1) On 27 October 1927 the Council of Minister decreed a further credit of 2,967,000 zloty.

each year on the credit side of the State Treasury account. The account of the sums estimated on the working fund for the years 1927-28 appears as follows :

Expenditure	17,288,600 zloty
Receipts	20,528,800 »

Also closely linked with the cause of agrarian reform are the grants of the State Agricultural Bank, which have special importance in connection with long term credit facilities, amortisable, against pledge of real property, in bonds issued by the Bank at 8 per cent., as well with loans in cash at short term. The State Agricultural Bank held at the beginning of the year 1927 a foundation capital of 25,000,000 zloty ; in the course of the budget year 1927-28 an increase of foundation capital of 50,000,000 zloty was obtained, the total thus reached being 75,000,000 zloty. In the first quarter of 1928, the foundation capital stood at 100,000,000 zloty.

The compensation granted for landed property subjected to expropriation is to be paid, partly in ready money, partly in 5 per cent. State Land Revenue bonds at their nominal value, partly in these same bonds, reckoned at the official price fixed every year by the Minister of Agrarian Reforms, in consultation with the Ministers of Finance and of Agriculture, this price however not falling below 70 per cent. of the nominal value of the bond. For the year 1927-28, the official price of the revenue bonds is fixed at 76 per cent. of the nominal value. The ratio of the part of the compensation paid in ready money to the part paid in land revenue bonds at nominal value, or as the case may be at a price less than this value, depends on the total area of the landed property belonging to the owner of the expropriated estates, and the greater is this area, the greater also is proportionally the part of the compensation paid in State Land revenue bonds at a price less than the nominal value ; on the other hand when the lands are of smaller extent the owners receive in ready money a proportional part larger than the compensation according to the following table :

Area	Part payable in ready money	Part payable in bonds at nominal value	Part payable in bonds at a price not less than 70 per cent.
	%	%	%
less than 1000 ha	50	50	—
1000-1500 »	45	45	10
1500-2000 »	40	40	20
2000-2500 »	35	35	30
2500-3000 »	30	30	40
3000-4000 »	25	25	50
over 4000 »	20	20	60

The Land Revenue is gradually amortised, and the purchasers of the lots formed on the areas which have been subjected to expropriation discharge their obligations, but the amortisation which is effected by means of half-yearly payments will not extend beyond a period of 41 years. The compensation granted for estates ownership of which has been transferred to the State in virtue of art. 2 of the law of 17 December 1920 will be paid according to the principles indicated already, modified so far that the part of this indemnity payable in cash will be liquidated in loan bonds of the State Treasury bearing 5 per cent. of interest per annum. It is to be repaid by the State Treasury in 10 annual instalments including the interest belonging to the part not repaid of the loan bonds. The interest payments falling

due for the period to be reckoned from the day on which the State takes over a landed estate, and up to 31 March 1928, are to be also paid in loan bonds.

The expropriation price of an estate is fixed on the basis of an estimate of the property, including the buildings, plantations, etc.; this valuation is made on the spot, and is based on special valuation instructions.

For the purpose of carrying out the valuation of landed property, expropriated in accordance with the objects of the agrarian reform, a Decree of the Minister of Agrarian Reforms, issued after consultation with the Minister of Finances and the Minister of Agriculture, divides the whole of Poland into five economic regions. This decree established in each economic region eight classes of arable lands, five classes of grasslands and 4 of pasture lands, according to the quality of the respective lands, fixing the price per hectare of the lands in each class.

Special increases and decreases in the price of lands, expressed in percentages, are prescribed, according to the distance from stations, or from centres of population of greater or less density, and according to the intensity of the cultivation on the arable lands, this intensity being expressed by the percentage of the area covered by crops of certain root crops or vegetables, for example, beetroot, potatoes, onions, cabbage, carrots. Forests of any size subjected to expropriation are valued on the basis of their yield value in accordance with local prices, while small forests, up to 5 hectares and in some cases up to 10 hectares, are valued on the basis of capitalisation of the value of the plantations, in the case of stands more than 20 years old on capitalisation of the value as timber. The land itself under forest is however valued separately as cultivable land, taking off 50 per cent. from the valuation price. The valuation price of sheets of water is fixed in a manner similar to that which is employed for arable lands, Poland being divided for this purpose into two economic regions. In each of these regions provision is made for seven classes, and the valuation of the waters is increased or decreased according to the character of the basin or catchment area and the degree to which the supplementary quantity of the water is assured. The valuation of the buildings is fixed on the basis of the main principles of insurance, obligatory for the General Mutual Insurance Institution.

The following table rates of prices, paid for arable lands expropriated without taking count of the increases or decreases mentioned above.

Economic Region	Price of one hectare in gold francs in the land class							
	I	II	III	IV	V	VI	VII	VIII
1	1005	805	670	500	250	100	50	12.5
2	860	690	575	420	215	90	45	11
3	710	570	475	355	175	70	35	9
4	550	440	365	275	140	55	25	6
5	350	280	235	175	90	35	15	3.5

(1) In view of the modification of the monetary system which took place in Poland in October-November 1927, these prices should be multiplied by 1.72 to obtain the present value in zloty.

If however the valuation price of the property subjected to expropriation, calculated on the basis of the prices of units of the different types of cultivation by applying the increases or decreases as prescribed in the rules for valuations, falls too far short of the current price, or of the average value of the yield of the property expropriated, the indemnity granted for the property in question may be increased or diminished by about 50 per cent.

The average price is taken as *i. e.*, the price, appearing in the purchase and

sale deeds of similar properties, purchased on the open market and not by way of parcelling, in the same country and the same economic region in the course of the year preceding that of the expropriation.

The yield value is taken to be the average annual profit, obtained from the property expropriated, in the course of the two last years preceding the carrying out of the expropriation, this profit being multiplied by 20. The expropriation price cannot be less than the value as legally established which serves as the basis for the income tax assessed on the landed property or on its expropriated part, not counting debts and other charges. The expropriation price cannot be less than the part not repaid of the loans granted by the long term credit institutions such as the State Agricultural Bank, the Bank of National Economy, as well as other institutions of long term credit, the valuation rules of which are approved by the Ministry of Finances.

The prices paid by the purchasers of lots, resulting from the parcelling effected by the State, are based on the real economic value of these lots. This real economic value is taken to be the arithmetic mean between the yield value of the property expropriated and its current price. If however the yield value of the different properties exceeds their current price, the selling value is recognised as the real economic value. The instruction of the Minister of Agrarian Reforms of 26 April 1928 contains the more precise details, relating to the fixing of the sale prices of lots of land at the time of the parcelling of State lands or of the lands of the State Agricultural Bank. (*Law Gazette of Poland*, 1928, No. 5, text 97).

Soldier settlers obtained land in virtue of a special enactment free, or at an equivalent price at a value of 10, 15 to 35 zloty per hectare, a sum payable by annual instalments in cash for a period of 30 years.

All types of real property found on expropriated lands are subject to expropriation, buildings used as dwelling houses as well as farm buildings and the other parts of industrial undertakings which constitute real property, and found on the estate in question. The owners have however the right to reserve for themselves lands built on. The basis of the calculation of the compensation is similar to that applied at the time of the expropriation of lands to the estimation of the properties expropriated. Live stock as well as dead stock and all movable property are not subject to expropriation.

In addition to the part of the purchase price for which the State Bank has given purchasers credit, purchasers of lots resulting from the parcelling obtain, under mortgage guarantee, investment loans coming from State funds, or from the funds of the State Agricultural Bank. The lots acquired may not be burdened with further loans in favour of third parties without the consent of the Land Offices, so long as the loans, coming from the State funds or from the funds of the State Agricultural Bank, and acting as a charge on these lots, shall not have been fully repaid.

In case of insolvency, the farm holdings resulting from the parcelling are subject to the general provisions which govern distraint. Distraint for loans granted on the State funds and on the funds of the State Agricultural Bank may also take place by administrative order, just as distraint for repayments to the Treasury not subject to dispute.

In accordance with the provisions of (c) of art. 15 of the law of 31 July 1923 on consolidation of lands, the official operations of consolidation take place, *inter alia*, in the case of parcelling of private estates or those belonging to the State, as well as in the cases of economic necessity, ascertained at the time of the carrying out of regulating procedure, such as, e. g., liquidation of servitudes, division of lands used in common, etc.

Independently of the law on agrarian reform, there is a special law on consolidation, that of 31 July 1923 on consolidation of lands, amended by Decree of the President of the Republic of 3 September 1927 (*Law Gazette of Poland*, No. 92, text 833).

In accordance with the provisions of art. 15 of the law of 31 July 1923 on consolidation of lands, consolidation is undertaken on the proposal of the parties concerned or officially by State initiative. Official action of the kind may be taken in the case in which a village has been destroyed by fire, at the time of simultaneous liquidation of servitudes or on the occasion of other regulating procedure, at the time of consolidation of the lands of other villages, or of the carrying out of land improvements as well as the parcelling of neighbouring estates.

In accordance with the provisions of art. 15 of the law of 31 July 1923, an operation of consolidation is undertaken on the proposal of the land owners; in the case of persons holding in common at least 35 hectares of lands which are dispersed or which are of great length in proportion to their breadth, situated in the area of a single administrative unit, and in the administrative units the area of which is less than 200 hectares, on the proposal of the owners or holders of at least one-tenth of the total area in question.

In consequence, an operation of consolidation is undertaken on the basis of an application, as contemplated in the measures, made in respect to a minimum area of lands by one or more of the owners or holders of such lands.

The office in charge of the execution of operations of consolidation is the same as that placed in charge of the carrying out of the agrarian reform, namely the Ministry of Agrarian Reforms (law of 11 August 1923 on the functions of the Minister of Agrarian Reforms and on the organisation of Land Offices and of Land Committees (*Law Gazette of Poland*, No. 90, text 706)).

The Land Offices collect for the technical operations of consolidation taxes (1) yielding not more than the actual costs incurred by the Offices, such costs to be determined by Decree of the Minister of Agrarian Reforms. The actual costs of consolidation per hectare amounted to nearly 30 zloty for 1927; nearly 20 zloty per hectare was collected from the parties concerned on an average. A wide measure of exemption either partial or total from consolidation charges is granted alike to individuals who are concerned in the consolidation and also to whole villages, communes and districts; on the average, 40 per cent. of the costs incurred for the technical execution of the consolidation operations by the Land Offices is found by the parties concerned.

In the law of 31 July provision is made for credit facilities for persons affected by consolidation operations so as to enable them to purchase lands for enlargement of their farm holdings, to carry out minor improvements and to transport as required. In the course of 1926, assistance was given to such persons to a total of 3,450,000 zloty, and in the course of 1927, of 3,890,000 zloty. The expenses of the technical work of consolidation are met by the Land Offices. Repayment of such expenditure, so far as exemptions from such charge have not been made, is spread over three annual equal instalments, and the first annual instalment is paid to the State Agricultural Bank in the course of the year which follows the that in which the decision of the regional Land Committee, approving the consolidation scheme, became valid. When those concerned in the consolidation bear the expenses of it, they are by the law exempted for the land tax for a period of 2 years.

On an average nearly 20 per cent. of those affected by the consolidation are

(1) Inspection and procedure costs are at the charges of the State.

moved with their buildings on to the new lots formed in the course of the consolidation ; such movings are more frequent in the Eastern voivodes than in the others (1).

The frequent occurrence of enclaves is due mainly to division of holdings. On the territory which was formerly Russian, where consolidation is almost exclusively carried on, there is in existence a restriction in respect of divisibility of farm holdings. Such measures however have proved inadequate for ensuring the permanency of the consolidation operations already executed. On this subject a bill is being drafted by the Minister of Agrarian Reforms. There are no special measures relating to consolidations carried out.

The deed of transfer of the title of ownership may be of two kinds : (a) for parcelling operations carried out by the Land Offices, the transfer of the title of ownership takes place in virtue of a decision of the regional Land Office (art. 61 of the law relating to the execution of the agrarian reform) which is of the nature of a public legal order ;

(b) for parcelling operations carried out by private persons, the deed of transfer is drawn on the basis of the general principles of purchase and sale agreements as prescribed by the civil legislation in force, but the owner is expected before proceeding to the parcelling to obtain from the regional Land Office approval of the scheme of parcelling, making a declaration as to the parcels, the identity of the new purchasers and the prices of the land ;

(c) for parcelling effected by the State Agricultural Bank the deed of transfer is drawn on the basis of the general principles of purchase and sale agreements, prescribed by the civil legislation in force but without the requirement that the owners of the parcelled lands must obtain approval of the scheme from the regional Land Office.

Owners of lands acquired in virtue of the law of 28 December 1925 relating to the execution of the agrarian reform have not the right to let these lands until the loans made from the State funds or from the State Agricultural Bank and forming a charge on the lands have been completely amortised (art. 54 of the law).

On principle the dwellings are not grouped into village but dispersed over the lots. Exceptionally, in so far as the buildings of the previous farms can be used on the spot by the purchasers, or where considerable difficulties exist in the supply of water to the farms, the dwellings are grouped in villages.

Measures intended to prevent division and alienation of farm holdings should be divided into two groups :

A. — Measures existing before the agrarian reform was brought into force :

On the territory of the former Congress Kingdom of Poland : the law of 11 June 1891 on the land organisation of the peasant farmers, published in Volume IX of the Collection of the Laws of the Russian Empire ; on the territory formerly Prussian : German laws the principal ones being : (a) the *Ansiedlungsgesetze* of 26 April 1886 and of 20 April 1898 ; (b) *Gesetz über Rentengüter* of 27 June 1890 ; (c) *Gesetz betreffend die Beförderung der Errichtung von Rentengütern* of 7 July 1891 ; (d) *Gesetz betreffend das Anerbenrecht bei Renten und Ansiedlungsgütern* of 8 June 1896 and the Decree of the Commissariat of the Supreme Peoples' Council of 25 June 1919 (*Journal Officiel*, No. 27, text 85) and finally the Decree of the Council of Ministers of 1 September 1919 (*Law Gazette of Poland*, No. 77, text 428) to be given force by the provisional Councils on the territory of the former Congress Kingdom of Poland

(1) A long term credit at low interest is granted from the State funds to cover the cost of moving of buildings.

and on the territory formerly Austrian, this Decree having been extended to the territories incorporated in virtue of the agreement relating to the preliminary peace and armistice, signed at Riga on 12 October 1920 (*Law Gazette of the Polish Republic*, No. 16, text 153, 1924).

In the law of 11 June 1891 on the land organisation of peasant farmers (Volume IX of the Collection of the Laws of the Russian Empire) it is laid down that, at the time of the alienation of the holdings and lands belonging to the peasants, and at the time of the preparation of other title deeds relating to these lands, except when it is a question of tenancy, the lands belonging to the peasants may be divided into portions on the following conditions: 1. that the area of lands remaining attached to the holding of the owner should be not less than 3.36 hectares; 2. that each of the portions formed by the division carried out on the lands contains either by itself or after being joined to the adjacent lands which belong to the person in favour of which the transfer of property has been made, an area not less than that above mentioned. All deeds and agreements concluded in contravention of the above measures are regarded as null and void.

The law on indivisible succession of farms granted to settlers with obligation to pay an annual rent corresponding to the interest and to the amortisation of the sum fixed as purchase price (1) and on the succession to farm holdings resulting from the land settlement legislation of 8 June 1896 (*Anerbengesetz*), contains provisions on the basis of which a mortgage must be registered, and it must be noted therein that the farm holding in question has been formed in the course of land settlement, and after the decease of the owner can only pass as a whole and to a certain class of heirs (either collaterals or descendants). A mortgage of this kind is entered in the Register on the basis of an appropriate clause in the contract.

The law of 7 July 1891 the object of which is to encourage the formation of "farms with obligation", taken together with the law of 27 June 1890, on the farms with obligation, introduces a type of farm holding, those which were sold to the purchasers by the Land Settlement Committee, under conditions of the contract, which contains a series of limitations of the right of the owner to do as he pleases with the holding he has acquired. *Inter alia*, the sales agreements contained as restriction that the farms with obligation cannot be divided nor sold either in whole or in part without authorisation from the Land Settlement. This restriction has been introduced by the Land Settlement Committee for reasons of a political kind, but it may be taken advantage of for economic ends, and the more so as these farms with obligation constitute a type of independent holding, of an area of from 10 to 20 hectares. Limitations relating to the transfer of the right of ownership to farms with obligation are equally in force in the event of the death of the owner.

By the provisional Decree of the Council of Ministers of 1 September 1919, it is established that the agreements relating to the transfer of the title of ownership of all real property, with the exception of property belonging to peasants, require for validity the previous authorisation of the State authorities. Such authorisation is refused when the transfer of the title makes impossible for delays the application of the principles of the agrarian reform.

B. — In the provisions enacted after the agrarian reform had been brought into force, and contained in art. 54 of the law of 28 December 1925 relating to the execution of the reform, it is established that the lands purchased in virtue of the

(1) These farms will be referred to subsequently as "farms with obligation".

law cannot be divided, alienated nor pledged, without the authorisation of the Land Offices, so long as the loans, made out of the State funds or those of the State Agricultural Bank which are a charge on these lands, have not been completely repaid.

C. — Measures which should be enacted for the purpose of stabilising the agrarian structure lately brought into existence. Such measures will in part relate to the question of the indivisibility and the alienation of the farming units enterprises (*chantiers*), formed in virtue of the law of 28 Décembre 1926 relating to the execution of the agrarian reform on the whole territory of the Republic and in the course of the consolidation.

If the purchase and sale agreement to be concluded involves the decrease of the land fund earmarked for agrarian reform on the whole territory of the Republic the Land Offices have the right to refuse the approval of the agreement. * For the same reason the maximum of the area of the new or enlarged holdings was fixed by the law at 20 to 30 hectares.

Succession in the rural families on the territory of the Republic of Poland is regulated by laws originating in the legislation of the former partitioning countries ; hence on the different territories of the State, the prescribed measures vary as follows :

(a) on the territory of the former Congress Kingdom of Poland succession among the peasant farmers is regulated by chapter IV of the law on the land organisation of peasant farmers (Collection of the Laws of the Russian Empire, Vol. IX).

(b) On the territory of Eastern Poland it is customary law which is obligatory for the peasants ; there are too in certain cases the provisions of the general civil law, such as the " ukase " of 9 November 1906, later replaced by the law of 14 June 1910, which grants to members of corporate communities the power of acquiring the title to hereditary ownership of lands of which they have the use and which form part of the community.

(c) On the territory where Prussian legislation has force, the *Anerberecht* and the law on farms with obligation (*Gesetz betreffend die Beförderung der Errichtung von Rentengütern*) of 7 July 1891 (*Gesetzsammlung*, page 279).

(d) On the former Austrian territories, the law in force on the subject is the Galician law on farms with obligation dated 17 February 1905, establishing that for the division or the partial alienation of a farm with obligation before the loan in bonds has been repaid, the authorisation of the National Commission for farms with obligation is required. Loans were granted for period of from 52 to 56 years.

The legislation of the territories formerly Prussian and Austrian does not contain any prescriptions other than those already examined limiting the divisibility of rural lands.

(to be continued).

CO-OPERATION AND ASSOCIATION

Produce Pools in Australia.

I. WHEAT POOLING.

The vexed question of wheat pooling in Australia has taken a new and in some quarters an unexpected turn, with the announcement dated 18 February from Canberra of a conference with the view to establishing a Commonwealth compulsory pool. Proposals have in fact been submitted for a compulsory pool for the bulk handling of wheat to a Conference of Federal and State Ministers and growers

by the Federal Minister of Markets and Transports, the scheme to be under the control of a board in each State elected by the growers and a Commonwealth Board (1). It is suggested that the Commonwealth and States shall unite in guaranteeing a fixed price to the growers for one year, calculated to meet the costs of production. (2)

These proposals are in fact the outcome of a situation which has for some years past presented difficulties and in this last year 1929 become definitely detrimental to the interests of Australian wheat growers. Some account of the earlier history of wheat pooling in Australia was given in a previous number of this Review (3) and it is intended here to outline later developments in order that the full significance of the above announcement may be clear.

The existing voluntary wheat pools of the four wheat producing and exporting Australian States are the direct outcome of the war-time administration of the export which actually lasted till the harvest of 1920-21. The desirability of continued organisation was sufficiently felt in New South Wales, Victoria and South Australia to lead to the establishment of a type of pooling organised by the growers themselves, with advances from the Commonwealth and Associated Banks partly made to the grower and partly to the pool for administrative expenses. In Western Australia a compulsory pool was at first administered by the Minister of Agriculture, but was exchanged for a voluntary pool in the course of the season 1922-23, while in 1924-25 a new departure was made in regard to the financial arrangements, and from that year the Western Australian wheat pool has been financed by the Co-operative Wholesale Society Limited of England and Wales. In each State the organisation is a co-operative one with the management in the hands of a committee appointed by the growers, the whole of the proceeds, less administrative expenses, being distributed amongst contributors of wheat to the pool. The first advance is made to growers on delivery of their wheat at country stations, the remaining advances at intervals through the marketing season. Except in Western Australia where the voluntary pool has received definite and continuous support, the support of growers has been variable and uncertain while the whole subject has been the theme of prolonged discussion between the advocates and the opponents of the system. The weakness of voluntary pooling as practised in Australia lies in the absence of binding contract; under the system now ruling growers have been free to deliver all or a part of their wheat one season to the pool without entering on any obligation as to their contribution next season. The following statement sufficiently illustrates the consequence of this method of working :

Percentages of Wheat Harvest received by the Voluntary Pools.

	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29
New South Wales	53.4	40.8	33	25	2.2	23	5	—
Victoria.	78	66	60	34	13	50	12	28
S. Austr.	30	44	33	12.5	19	30	25	44
Western Australia	96	81	40	45	29	65	53	58

(1) *The Times*, No. 45, 441. London, 19 February 1930.

(2) A ballot of all Australian wheat growers is to be taken by 21 July 1930 to authorise the establishment of State Boards, the Federal Board to be constituted by proclamation subsequently. The scheme will only take effect if at least three States elect Boards and will apply only in respect of States so doing. (*The Land*, XX, No. 976, Sydney, 21 February 1930).

(3) *International Review of Agriculture*, March 1928, p. 257-262.

A parallel scheme, known as the "warehousing scheme" is also in operation in Western Australia, bringing the percentage of wheat marketed co-operatively decidedly higher, reaching 79 per cent. for the 1926-27 crop and 85 per cent. for that of 1927-28.

The principle of the binding contract, accepted in 1923 in Canada as an essential part of a wheat pooling programme, began in 1926 only to be definitely advocated in Australia, largely as the result of the visit to Australia of certain leading members of the Canadian Wheat Pools. At the International Wheat Pool Conference held at Kansas City in May 1927 the Australian delegates learnt more of the advantages and working of the binding contract. In the same year the passing of the Marketing of Primary Products Act in New South Wales gave the opportunity to the advocates of pooling in that State to urge the wisdom of adopting a stricter form of pool. New South Wales has taken the lead throughout in the movement, and has shown a certain development in farming opinion as regards the actual form preferable. The original line of policy of the Farmers' and Settlers' Association of New South Wales was the simple introduction into the voluntary pool of a contract binding the grower to deliver a certain percentage of his crop to the pool over a period of years. It soon however became clear that the competition and inducements offered by the open market must inevitably hamper the success of a voluntary pool, even if safeguarded by a contract, and although there was still a noticeable tendency to cling to the idea of a voluntary system, discussion began to turn round the question of a State compulsory pool, which became a matter of practical politics after the passing early in 1927 of the Marketing of Primary Products Act by the New South Wales Parliament. By the Act, provision is made for the compulsory pooling of any product, provided that at least two-thirds of those engaged in the particular industry shall vote on the question, and that not less than two-thirds of the votes cast shall be in favour of a compulsory pool. In June 1927 a petition was signed by more than two hundred New South Wales growers—a number greater than the required minimum—asking that wheat be declared a commodity under the Act. For various reasons, it was not until the following year that a pool of growers (1) was taken in the State on 14 September 1928, when the proposal for a compulsory pool was defeated by a majority of 1441 out of 13,573 votes polled. Owing to the absence of Marketing Acts in Victoria and South Australia the movement for a State pool has taken less definite shape, but the trend of opinion has been the same. On the other hand, in Western Australia the growers' organisations have preferred to maintain control through their own co-operative channels.

After the defeat in New South Wales in 1928 it was considered that it would be inopportune to press at once for another ballot, and the question would probably have remained in abeyance for another two or three years, had it not been for the extraordinary fall in wheat prices which occurred in the course of 1929. It will be recalled that although the wheat production of Australia varies around 4 per cent. of the wheat production of the world, it is none the less the fourth largest wheat exporting country (after Canada, United States, and Argentina), and exports about 75 per cent. of its harvest, taking one State with another. In the season 1928-1929 the Australian crop reached the figure of 159,497,000 bushels, or 43,408,704 quintals (nearly approaching the record crop of 1915-16). During 1929, the exports

(1) An attempt had been made to take a ballot on the question of a compulsory wheat pool prior to the passing of the Marketing of the Primary Products Act, but a number of growers refused to vote in ignorance of the provisions of the Act, and it was held that no decision could be valid.

amounted to 28,712,880 quintals and the exceptionally large shipments coincided with an especially abundant harvest in Europe. The consequence was, as will seen from the accompanying graph, that not only were prices at an unprecedentedly low level during the early months of the year, but even in the months of June and July, usually a peak price period owing to depletion of stocks in the Northern hemisphere, the Australian exporter had to take prices scarcely higher than the lowest received in 1928, and hardly if at all covering production and shipping costs.

It may however be noted that the Australian crop of the season 1929-30 was only 112,000,000 bushels (or about 35,380,000 quintals). Hence a more satisfactory price may probably be looked for during the Australian export season of 1930, unless the world carry over, which is very large, should cause a general price depression.

Prices in Liverpool or London (c. i. f.) per quarter of Australian Wheat (1927-29).

	1927	1928	1929		1927	1928	1929
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
January	54 4	51 1	46 4	July	54 3	50 7	49 0
February	53 4	49 9	47 7	August	53 10	45 1	51 2
March	53 6	52 7	46 6	September	52 11	45 0	47 9
April	53 2	54 2	44 11	October	51 7	47 4	44 3
May	54 11	54 10	42 1	November	51 10	47 11	45 6
June	56 3	52 10	42 1	December	51 9	46 10	48 6

The extremes of the above table, viz., 56s. 6d., and 42s. per quarter represent 7s. 0³/₄d. and 5s. 3d. respectively per bushel, c. i. f., as the European price. The grower's price is quoted usually as cash paid on delivery at country station, or occasionally on a seaboard basis. As regards ocean freight the shipping companies made certain reductions during 1929 in view of the serious fall in prices (1), but this item varies, chiefly with the time of year. Approximately the charges as between farm and the European market amount to about 1s. 3d. per bushel. Hence the grower's price this year has been as low as 4s. per bushel or even lower. For New South Wales the average grower's price for 1928-29 crop is given in the Report of the Department of Agriculture for 1929 as 4s. 0¹/₂d.

On the local wheat markets of the different States there was a correspondingly serious depression, and it was during this crisis that the question of a Federal pool which should ensure an all-Australian price began to take definite shape. It was however the opinion in New South Wales that this ideal could only be reached by taking one step at a time, and a conference of wheatgrowers held in Sydney in July 1929 was unanimous in favour of another ballot for the establishment of a State compulsory pool, with the recommendation that in the event of the pool coming into existence efforts should be made to cooperate with organisations in other States for the purpose of securing an Australian price. The New South Wales Government thereupon agreed to take another poll of growers on the question of constituting a Wheat Marketing Board under the Act, and it was understood that, if created, the Board would consist of five growers' representatives and two Government nominees, also that the Government would guarantee a first advance to growers of 3s. 6d. on deliveries made by them. The proposal was however again defeated at the poll taken in September, but a larger proportion (72.2 per cent.) of qualified growers voted than in 1928, and an affirmative vote was obtained of 60.5 per cent. of the poll, instead of as previously a negative of 55 per cent. It will

(1) *Pastoral Review* XXXIX, No. 6, Melbourne, June 1929, p. 573.

be remembered that a majority representing 66 per cent. is required by the Act. The New South Wales pool advocates expressed themselves satisfied with the result and ready to test the position again when the time should be considered opportune.

As regards the position in other States, it has already been noted that in Western Australia which now grows more than one-third of the total Australian crop the voluntary wheat pool receives unqualified support. To quote from the report recently made to the Horace Plunkett Foundation on the tour undertaken for observation of co-operation as applied to agriculture in certain overseas countries, "A distinctive feature of the Westralian wheat plan is that the pool is conducted entirely on a voluntary basis. The growers do not sign any contract for delivery ; all they do is to notify the pool management what amount they intend to deliver. This practice is praiseworthy only where it is possible, and while it is possible ; it is difficult to tell whether it is made possible partly by lack of competition or wholly by a co-operative spirit which renders contracts unnecessary » (1). The wheat pool is only one among the activities of the Westralian Farmers Limited, and like all their undertakings is worked largely on the basis of local regional co-operation of an especially healthy kind. The financial success of the scheme has again been marked during 1929 when it was stated that as a result of the holding of the wheat, the West Australian growers benefited to the extent of three-quarters of a million sterling by an overnight rise of 3s. a quarter which occurred in June, while the difference made by a further rise in July amounted to 2,500,000.

In Victoria a representative meeting of growers in October declared for the setting up of a Marketing Act enabling the wheat industry to obtain the benefits of a compulsory pool, if desired by the majority. On the other hand it was announced in December that more than 40 per cent. of the growers had signed contracts to deliver the whole of their marketable wheat to the Victorian Wheatgrowers' Corporation Limited, the trading name of the Voluntary Pool of Victoria. In South Australia the voluntary pool system is accepted but does not command vigorous support. Tasmania has no wheat export and has only about 28,000 acres under wheat for local consumption.

Queensland is not a wheat exporting State, and the Wheat Marketing Board is one among the numerous Commodity Boards organised under the Primary Products Pools Act of 1922 (afterwards consolidated under the Primary Producers' Organisation Acts and Primary Producers' Pool Acts, in 1926) for control of the home markets of the State. As a matter of fact, the Wheat Marketing Board was brought into existence by the Wheat Pool Act of 1920, when 88 per cent. of the growers voted for its establishment for one year. Its operations have subsequently been extended, first for three and then for five years without opposition. All wheat is pooled from prime milling to third grade feed wheat. Administration expenses in 1928 were 4.47 *d.* per bushel. Wheat is stored and insured by the Board, and hail insurance costs one seventh of a penny per bushel, as compared with 2 ½ *d.*, when insured with insurance companies. As regards prices, the Queensland grower's price for milling wheat has never since 1920 been less than 4s. 11*d.*, which was the minimum price in 1929. Feed wheat which is marketed in an orderly way on the Brisbane market, the absorption capacity per week of which is known, has also obtained steady prices according to quality. Speaking generally the Queensland price is always above New South Wales parity. The success of the Wheat Marketing Board in Queensland is often quoted in New South Wales and Victoria as an argument in favour of compulsory State pool-

(1) Year Book of Agricultural Co-operation in the British Empire, 1929. London 1929, p. 14.

ing, just as the success of the West Australian pool is quoted in these same pages as an incentive to voluntary pooling.

It will be seen that the Federal wheat pooling scheme now proposed is in a sense the outcome and reflection of the trend of opinion in the States. The provision of export control machinery for wheat is in fact part of a large objective of national control of primary products (1) and has been under consideration by the Federal Government for some time past (2). The subject was under discussion at different times in 1929 in the Federal Parliament, but the question became engulfed temporarily, in the party politics of the general election, and extravagant hopes were held out to wheat growers in regard to the guaranteed price. In the present proposals the suggested guarantee which the Commonwealth and the States are to unite in making is 4s. a bushel to growers, equivalent to 4s. 6d. seaboard price, for a term of one year. It is obvious that a guaranteed price to growers is a factor of immense importance to the success of such a scheme, while it is by no means easy to fix the exact figure even over a short period. The interests of the tax payer must be protected, but on the other hand the price must be high enough to cover growers' costs, *i. e.*, to encourage the good grower while offering no inducement to uneconomic production. In 1927 producers' costs were quoted at as much as 5s. 9d. the bushel, but since then the adoption of improved methods with consequent increases in yield has effected decided reduction. On the Western Australian wheat belt where large scale methods prevail, costs are said to be as low as 4s. a bushel, while in Victoria 4s. 6d. has recently (3) been quoted for a 900 acre farm with a yield of 21 bushels per acre, a yield much above the State average. Farm accountancy methods are not yet so far developed in Australia as to afford a basis for general statements. It would seem however that the guaranteed price suggested in the Federal scheme is probably too low for the average grower (4).

II. COLLECTIVE MARKETING OF PRODUCTS OTHER THAN WHEAT IN AUSTRALIA.

(a) *Collective marketing as organised in any one State.*

Reference has already been made to the Queensland system which is part of the unique scheme for organisation of the agriculture of that State brought into force by the legislation of 1922. It is desirable to distinguish between the original scheme set out in the Primary Producers' Organisation Act and the Primary Products Pools Act of 1922 and its later modifications. Briefly the "completely unified national organisation", stated by the title of the former of the two Acts to be the objective, was a regional enrolment of all "primary producers" into local associations and District Councils under a general Council of Agriculture with supreme power. The pools or Marketing Boards appear to have been first envisaged as *local* or *district pools* of any product, the growers of that product within the local organisation having power to demand a poll or ballot. Once constituted the Marketing Board consisted of five representatives of the growers, one being

(1) See: *The Land*, Vol. XIX, No. 952, Sydney, 6 Sep. 1929.

(2) See address delivered by the Federal Treasurer to the New South Wales Farmers' and Settlers' Conference in August 1927 summarised in: *Wheat Pooling in Australia. International Review of Agriculture*, March 1928. Quoted from the *Land*, Vol. XVII, No. 864, Sydney, 12 August 1927.

(3) *Pastoral Review*, Vol. XXIX, No. 10, Melbourne, October 1929 p. 977.

(4) The State Compulsory Wheat Pool Bill was defeated in the Australian Federal Senate on 4 July, after having passed the House of Representatives at Canberra. See: *Corn Trade News*, XI., 28, Liverpool, 9 July 1930, and *The Land*, Vol. XX, No. 996, Sidney, 11 July 1930. (Ed. Note.)

nominated by the Minister as chairman. All the commodity of the district was delivered to the Board and all sales except to the Board prohibited.

On the other hand in 1923 legislation was passed for the establishment of a *State-wide Fruit Marketing Board* under a specially appointed Committee of Direction with sectional Committees for the different kinds of fruit, and local association of fruit growers were formed to attend to the necessary detail on the spot of preparation, grading, packing, etc. for the market. This Fruit Marketing Board was admirably organised and remarkably successful, and it soon became clear that such an organisation by commodities was more practicable and more useful than regional organisation of heterogeneous "primary producers". Accordingly by degrees the powers of the Council of Agriculture were directed to establishing State-wide Marketing Boards for other commodities and the regional organisation became merely subsidiary. Among the commodities pooled in this way, in addition to wheat, are : butter, cheese, eggs, cotton, Northern maize, Northern pigs, arrowroot, etc., in all 14. In some instances marketing boards have established their own distributing organisation, in some cases existing channels of distribution have been utilised under agreement, or agents have been employed. Advances are made to the growers at time of delivery from 50 to 75 per cent. of the market value. These advances are now made, under the Commonwealth Rural Credits Act of 1926, out of the Rural Credits Fund in the Commonwealth Bank of Australia, previously from banks with guarantee of the Queensland Government, which was never thereby involved in loss.

Of the other States, New South Wales alone has a Marketing of Primary Products Act, passed in 1927. Amendments were introduced in 1928, widening the representation of producers on the proposed boards and generally strengthening their position. As distinct from the procedure in Queensland all initiative must come from the producers, products being only proclaimed as "commodities" under the Act on petition of a certain minimum of growers. The subsequent establishment of marketing boards for any commodity also rests entirely with the growers, and unless a majority of two-thirds are in favour a board cannot be set up. In addition to wheat, rice, eggs, butter, honey and vegetables have been proclaimed commodities. A Rice Marketing Board has been set up with the result that it has been possible to obtain higher prices on large consignments to millers and that the importation of foreign rice has practically ceased. A Honey Marketing Board is also in existence, and the question of organising the potato industry by means of a Board has been under consideration recently. As already noted in the case of wheat, however, there has been in New South Wales a certain tendency to hang back from any general establishment of the "compulsory co-operation" which is implied in the formation of commodity marketing boards. This may be due to the existence of very considerable co-operative activity in the State. A large number of commodities are co-operatively produced, and a large proportion of these are marketed co-operatively. For example, 90 per cent. of New South Wales butter is produced by co-operative dairying, and of this 70 per cent. is marketed by co-operative societies, while in other cases the proportion is higher. As in the other States the more important co-operative wholesale societies are linked with the Australian Producers' Federation and through it with the Overseas Farmers' Federation. Hence the position, apart from marketing boards, is very strong, and it is difficult to say whether or not the position of the different growers would be benefited by the more general adoption of marketing boards under the Act.

The export control exercised by the Commonwealth in respect of certain Australian commodities may be regarded as a form of collective marketing or pooling in

so far as orderly overseas marketing on favourable terms are thereby guaranteed to the grower. Export Control Boards were set up in 1924 for dairy produce and dried fruits, and in 1926, for canned fruits, and in consequence these products can only be exported from Australia under license from the Ministry of Markets and Transports. The machinery created by this legislation is fully described in the note on "Recent Marketing Legislation in the Australian Commonwealth" which appeared in the November 1929 issue of this Review. As regards working, the Boards have, in the case of dairy produce and dried fruits, secured continuity of supply, regulated shipments, stabilised overseas prices, obtained reductions in freight and insurance and generally benefited the industries. The operations of the Canned Fruits Board have been somewhat limited by a considerable drop in the production of canned fruit. The Fresh Fruits Overseas Marketing Act passed in 1927 was designed to set up a similar Board, but owing to the adverse decision of the growers, this Act remains inoperative up to the present.

A further encouragement to export marketing of butter is that given by the well-known Paterson plan, or the Australian Dairy Stabilisation Scheme. This consists in a levy imposed by voluntary agreement on all manufacturers of butter which forms a fund from which a bounty is paid back to the factories on all butter exported, the Australian consumers' price naturally also reacting to the level of the world price plus the export bounty. The dried fruit growers are now asking the Commonwealth Prime Minister through their Association for establishment of an Equalisation Fund as from 1931 to insure them the minimum cost of production, based on sliding scale of yields per acre.

The grading of Australian products as affected by the various systems of collective marketing is a subject of great interest but requires separate treatment.

C. H.

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CREDIT

Agricultural Credit in the Argentine Republic.

In accordance with the progressive national policy in respect to agriculture, the National Bank of Argentina (*Banco de la Nación Argentina*) is placing its funds increasingly at the service of the farmers. The cultivator may in fact, during the

whole of the crop period, count upon the assistance of the Bank, which will not fail him even at times of crisis but will continue to lend on the sole guarantee of his industry and integrity. Similar advantages are available for the stock breeder who obtains loans readily on his products.

The provisions in regard to agricultural credit and the figures relating to loans are reproduced from the report and statement of accounts of the financial year 1929 of the *Banco de la Nación*.

Loans with agricultural pledge of seed. — With the object of co-operating in the seed selection campaign which is being carried on by the Argentine Ministry of Agriculture, and which is enabling farmers to purchase selected seeds, the Board of Management of the Bank has decided to establish in the branches of the Bank situated in the administrative area of the Official Register of the above Ministry and of the registers to be subsequently formed, special loans with agricultural pledge on seeds of wheat, and maize and on linseed.

The maximum limit of each loan is fixed at the sum of 20,000 pesos (national money) with 6 per cent. interest to be made up to 70 per cent. of the value of the respective seeds. The period of these operations is 180 days to expire 31 July in the case of wheat or linseed, and on 30 September in the case of maize.

The cereal must be insured unless stored in the silos belonging to the railway companies "with full liability". Insurance may be dispensed with if the grain is stored in silos belonging to the applicant.

Graduated loans for harvesting, stripping and bagging of maize, and on maize stripped from the cob and bagged. — In accordance with the practice established for the annual harvesting of the maize crop, the branches were authorised in 1929 to make the following graduated loans :

For the harvesting of the grain up to the point of bagging, loans are made up to a maximum of 6,000 pesos (national money) in the proportion of 3 pesos for every 100 kilogrammes of the total yield ; or at the rate of 2 pesos for the gathering and 3 for stripping and bagging, with maxima of 4,000 and 2,000 pesos respectively. The period is fixed at 180 days, to expire on 31 October. As regards guarantee, in the case of owners of the land or tenants paying rent in cash, the simple signature is accepted ; in the case of other persons, a pledge security is required or signatures of guarantors.

For maize stripped and bagged loans are made up a limit of 10,000 pesos in national money in the proportion of 3 dollars for every 100 kilos. For larger sums than the maximum fixed, applications are made to the Board of Management through the medium of the branches of the Bank.

These credits are to cancel those previously held by the applicant in view of harvesting, stripping and bagging and the promissory notes for seeds without guarantee. The cereal must be insured, graded and inspected by an expert. An interest of 6 per cent. is fixed, the period to be 180 days to terminate not later than 30 November, taking into account the date of the grant and of the probable sale of the product.

Graduated loans for harvesting, threshing and bagging of wheat, linseed, barley, oat and rye and on these products either bagged or in bulk. — On the loans for simple harvesting up to the time of laying the cereal for threshing, the maximum allowance is 3,000 pesos paid at the rate of 6 pesos to 8 per hectare, in proportion to the calculated production, which should not be less than 500 kilogrammes per hectare. The guarantee of this loan consists in the simple signature of the applicants with proof that they are owners or tenants paying a cash rent ; for share tenants the signature

is required of the owner or of the principal tenant, or in default of these, the pledge is required of the corresponding portion of the crop.

The loan for threshing and bagging is made up to a maximum of 5,000 pesos (national money) at the rate of 2 pesos for each 100 kilog. of yield calculated, provided that in no case does it exceed 16 pesos per hectare. A pledge is constituted over the cereal when laid down for threshing which is continued over the threshed grain resulting.

The loan on the cereal in bags or in bulk is agreed to up to the total of 10,000 pesos, but may be increased by authority of the Board of Management. The maximum proportions for 100 kilogrammes in each case are as follows : linseed, 8 pesos ; wheat 6 pesos, rye 4, barley and oats 3 pesos, when the cereal is stored in silos belonging to the farm estate or is still on the fields of the cultivators. These proportions are increased to 9, 7 and 5 pesos respectively, with corresponding modification in the case of barley and oats, when the cereal is stored in silos belonging to the railway companies or firms with limited liability, situated near the loading stations. The corresponding voucher is for payment in full within 90 days up to and including the 30 June next, with interest at 6 per cent. per annum. The cereal must be insured, and before a decision is taken as to the loan the claim is examined and classified by an expert. All previously incurred debts of the applicants, in connection with loans for purchase of seed not guaranteed and for harvesting, threshing and bagging, are cancelled by the amount of these loans.

Loans for purchase of new harvesting machinery and tractors. — The branches of the Bank authorised for the purpose grant loans up to 3,000 pesos (national money) for the purchase of new harvesting machinery and tractors to the proportion of 50 per cent. of the value of the purchase of the machine. The corresponding voucher is for full payment in one year, with annual interest of 6 ½ per cent. A pledge is constituted over the machine purchased, and the machine must be insured against fire.

These branches are empowered, in the case of borrowers who have had bad harvests, to extend the loan for the maximum period of one year, by amortisation of an amount not less than 20 per cent., and on verification of the good state of preservation of the machine.

Special loans to farmers who have lost their crops and are without the means of subsistence. — The Board of Management in view of the situation in which farmers are placed who have completely lost their harvest resolved to offer the assistance of the Bank to those persons who are in most urgent need of it to meet their necessary expenses up to the time of the harvesting of the crop raised from the next sowing, and special credits are allocated for this purpose.

Persons benefiting by these loans are such as can fully prove their capacity as farmers with tenure of not less than three years and own the necessary implements and work animals.

The amount of these loans varies between 2,500 and 5,000 pesos, according to the number of hectares sown ; and it is applied to the maintenance of the farmer, his family and the farm workers to be employed during the year 1930 ; to the pasturing of the work animals ; the work of ploughing, harrowing and sowing, purchase of seeds ; taking out of hail insurance at the right moment, and other expenditure of an emergency type.

To each one of the above objects a proportional part is assigned which the managers of the branch banks will pay over to farmers as may be necessary for their respective expenditure, signing a cheque against the current account which is opened

for the amount of the loan in the name of the borrower, the object being to avoid costs of sealing and stamping the documents.

The guarantee of the loans may be said to be a purely moral guarantee, since they are made to all honest and hardworking farmers, on signing a document by which a formal promise is made of pledging the sown land as soon as seed has sprouted.

The period of the pledge agreement is extended to 31 January 1931, and in the total must be included, besides this loan, the other existing debts, as also the cost of the seal, the interest and the registration of the agreement up to the time of expiration.

These credits earn an interest of 6 per cent. which is added to the amount of the loan.

Loans for establishment of small holdings (granjas). — As an experiment, the Villa Maria Branch (Cordoba) was authorised to grant loans not larger than 10,000 pesos intended for the establishment of small holdings (*granjas*), based on the personal liability of the applicants. The renewal of these credits is effected by means of quarterly instalments of 5 per cent. the first year, 10 per cent. in the second and 20 per cent. in the third year, with annual interest of 6 $\frac{1}{2}$ per cent.

Loans for the purchase of breeding stock with good dairy aptitudes. — Special loans are made for the purchase of breeding stock with good dairy aptitudes registered by the Ministry of Agriculture of Argentina or by the Sociedad Rural Argentina. A maximum of 3,000 pesos is granted to each customer, the amount not to exceed more than 1,500 pesos per each breeding animal, at the rate of 85 per cent. of the value of the purchase. A pledge is constitute on the animals bought. An interest of 6 per cent. is charged on the loans, the vouchers being for full payment in 180 days or quarterly amortisation at 20 or 25 per cent. ; and of 6 $\frac{1}{2}$ per cent. on vouchers for full payment in more than 180 days, or for quarterly amortisation at 10 per cent., or half-yearly at 25 per cent.

Loans for purchase of breeding cattle and sheep. — Within a maximum limit of 10,000 dollars credits are granted for purchase, in the following proportions : cattle pure breed, stud bred 800 pesos ; the same, not stud bred 500 dollars ; pedigree cattle stud bred 1,500 pesos, not stud bred 600 pesos ; pedigree sheep stud bred 300 pesos ; not stud bred 150 pesos. Loans are made up to 85 per cent. of the amount of the purchase when the total loans do not exceed, 2,000 pesos ; and up to 60 per cent. if larger sums are involved.

If the loan should be on pledge of stock, a year is allowed for repayment or repayment is made by half-yearly amortisation at 5 per cent. if on the simple signature of the borrower quarterly amortisation payments are allowed at 10, 20 or 25 per cent. Interest of 6 per cent. is charged on credits with quarterly amortisations of at 20 or 25 per cent. ; and interest of 6 $\frac{1}{2}$ per cent. on loans repayable in a year's time, or with half-yearly amortisation at 25 per cent. and quarterly amortisation at 10 per cent.

Pledge of stock. — The advantages of these loans are made available for farmers who undertake cattle or sheep farming on a large scale, for dairy enterprises and for farmers keeping bullocks in winter quarters in readiness for the chilled meat industry or for the local market ; they are not available for those who engage in live stock dealing for purposes of speculation. Pledges may be constituted for 540 days with option of 180 days extension, repayable by amortisation at 25 per cent. on the total sum, over cows from 18 months of age, ewes and bulls from 18 months

to 5 years and bullocks. Valuation of this stock is effected by experts ; the valuation does not take into account the calves or lambs at foot or carried, nor the wool in the case of the ewes.

The land owners or tenants obtain up to 75 per cent. of the valuation when a pledge is constituted on dairy cows in milk. The breeder owners of the land on which the stock is grazing obtain the same percentage. Tenant stock breeders and owners or tenants of winter quarters for stock only obtain up to 60 per cent.

The maximum sum granted in the case of pledges for 540 days is 50,000 pesos ; there is no limit fixed for loans for the ordinary periods. The interest of these loans varies between 6 and 7 per cent. according to the nature of the pledge and the presumed capital resources of the applicants.

Loans for shearing expenses. — These loans are granted up to a maximum of 1,500 pesos in the proportion of 1.25 pesos per flock including lambs. The period is up to 90 days, renewable for another equal period in the event of *force majeure* ; the absence of purchasers for the wool being so regarded. The signature of the applicants is sufficient guarantee except in the case of those who have had no transactions with the Bank and are not land owners, in which case a personal guarantee is required. Loans cannot be made if a pledge has already been constituted over the ewes.

Loans with pledge constituted over wool. — Within a maximum of 50,000 pesos loans are granted with pledge on wool for a period of 90 days which may be extended for an equal term in the case of *force majeure* with interest of 6 and 6 ½ per cent. per annum. The proportion of these loans for every 10 kilogrammes of wool is fixed every month by the Board of Management, according to the classification of the wools. Before the pledge is constituted, the wools are inspected by an expert. Fire insurance is an essential condition for pledging.

Special regulations have been made for Southern Argentina in respect to the objects of these loans.

* * *

Apart from the special loans for agriculture and stockbreeding provided for as above, the Bank continues to make its funds available for the development of regional crops in the manner shown in the accompanying table :

Regional Agricultural Loans.

Class of Loans	1925	1926	1927	1928	1929
Mate growers	1,402,800	3,035,800	3,826,000	5,503,100	4,602,100
Cotton growers	1,120,400	1,884,900	1,376,300	1,367,600	2,485,800
Vine growers and wine makers	33,078,100	39,741,200	34,838,500	60,660,000	59,761,200
Sugar cane growers	44,123,000	47,042,800	51,210,300	52,848,200	43,110,400
Forest overseers and transporters of timber . . .	—	5,668,100	6,422,400	8,021,700	9,168,900
For cutting and of lucerne . .	—	2,055,800	8,210,600	6,846,900	8,899,000
Tobacco growers	528,300	585,500	608,500	608,100	514,000
Rice growers	752,600	140,300	609,200	231,700	217,400
For encouragement of orange growing	—	—	30,900	42,000	27,000

Loans for purchase of harvesting machinery and tractors, which in 1928 scarcely amounted to 80,400 pesos (national money), amounted in pesos (national money) to 999,500 in 1929. On the other hand loans intended for the purchase of breeding stock on the local markets declined slightly from 509,480 to 474,450 pesos between one year and the next.

Loans intended for the encouragement of certain special branches of stock-farming have been assigned as shown in the following table :

Special Stock Farming Loans.

Class of loans	1926	1927	1928	1929
Wool growers	17,980,000	20,670,000	22,265,000	26,749,000
Co-operative associations for salting and curing	1,909,000	2,986,000	3,588,000	4,182,000
Cheese manufacturers	2,035,000	2,927,000	2,957,000	2,986,000

A remarkable impulse has been given to the system of agricultural and stock breeding pledges during the year : the balance on 31 December 1929 was 32,880,000 or 5,342,000 pesos more than the previous year.

FARM ECONOMICS

Accountancy Offices in the Netherlands and Some Accountancy Results for 1927-28 and 1928-29.

Organisation of farm accountancy in the Netherlands has been since the war in the hands of Central Co-operative Associations, and has developed to a remarkable extent. Every province has its Central Co-operative Association. Each association keeps the accountancy books of its members, compiles statistics in accordance with the results obtained, fills the income tax and land tax assessment forms, and prepares all claims whenever the payment of the tax is fixed by the collectors at too high a rate. The farming results subject to this form of control are published separately each year in the *Algemeen Nederlandsch Landbouwblad* and as a whole in the *Verslagen en Mededelingen van de Directie van den Land-bouw* two years after the closing of the accountancy year. The financial year usually opens on 1 May, the date on which the income tax payment becomes due, and when the stocks in store are at their lowest.

The accountancy system which the offices have adopted is a very simple one. Two accounts are included in the inventory : the farm account and the private account. There is no household account ; maintenance expenses are not calculated, and contributions in kind by the farm to other accounts and by other accounts to the farm do not come under inspection.

Every month the accountancy offices make an abstract of the statements of receipts and expenditure as returned by the members. On the back of the forms on which these statements are made returns are made of the livestock.

The values represented by capital in land and capital in buildings do not figure on the farm inventory. Parcels which are rented are equally excluded. All the offices draw up the inventory of the operating capital and of liabilities at the

beginning of the year, but each of them proceeds differently as regards the valuation of this capital.

The Friesland accountancy office, with headquarters at Leeuwarden, makes group inventories of farm machines and implements, and calculates an amortisation on the basis of the repairing expenses. Amortisation for livestock is not calculated; herd increase compensates for the decrease in the value of the animals. Cash in hand at the end of the year is entered on the private account. Only current outstanding payments are charged to the farm inventory; other debts appear on the inventory of the private account. The farm estate however pays the interest on such debts. Taxes and insurances are also charged to the inventory of the private account.

Allowances in kind appear in the statements of accounts mentioned. Household expenditure is not calculated, but the board of farm servants is an item checked by the Offices, and for each servant one florin per day is entered to the account of the farm. The older children who do not receive an actual wage are treated on the same basis as servants, and their work is recompensed at the rate of 600 florins per year. There is no wage claim for unpaid labour made on behalf of the farmer himself. The use of the vegetable garden no longer enters into the account.

At Zwolle, the valuation of dead stock is also based on the costs of repairs. Valuation of supplies on hand is ruled by market prices. Cash in hand is charged on the farm inventory.

As regards live stock, group inventories are drawn up. There is no amortisation in respect of animals kept for profit. The valuation of other types of live is based stock on the customary values.

Debts, with the exception of debts on land, taxes and insurances all appear on the private account. Contributions in kind to the farm by other accounts and *vice versa* come under the inspection. The rental value of the dwelling house is fixed by the Treasury, and the value charged on the inventory. The annual average rental is 200 florins.

Household expenses are not calculated. Servants' board is checked, and the cost of maintenance per day is estimated by the peasant farmer. He receives himself a wage claimed for his unpaid labour of 2.50 florins per day. Sons and daughters are remunerated in the same way as servants.

The Groningen office also calculates amortisation of dead stock on the basis of repairing costs. Live stock kept for profit are not amortised. Amortisation of dairy cows is scaled over an 8 years period, that of breeding bulls over one of 3 years, and that of horses over a period of 12 years. The valuation of live stock and supplies in hand is based on selling values. Cash in hand is carried to the private account. Taxes and insurances are charged to the farm estate and income tax to the private account.

Contributions in kind by the farm to other accounts are not controlled, but are estimated at a flat rate (200-300 florins per family of 4 persons). The family does not pay to the farm account any rent for the dwelling house.

Labour and board of the farm servants are also estimated at a flat rate.

The figures that follow, which appeared in No. 805 of the *Algemeen Nederlandsch Landbouwblad*, will illustrate the statements that have been made above, and will make it possible to form an exact idea of the accounting system of the Netherlands, which in spite of some divergence of detail is the same for all the provinces.

Accountancy Results of 87 farm holdings of the Province of North Holland.

Expenditure	Average values per ha.	Receipts	Average values per ha.	
1. Wages	76.49	1. Milk and milk products	340.76	
2. Seeds	0.86	2. Cattle	84.09	
3. Fertilisers	10.59	3. Pigs	118.02	
4. Forage	217.30	4. Crop products	14.34	
5. Miscellaneous	50.98	5. Sheep	27.79	
6. Rent	157.22	6. Farm products consum- ed by family, dwelling house, horses, poultry	29.16	
7. Interest on farming capital	30.31			
	--			
Total . . .	544.15	Total . . .	614.16	
Difference between receipts and expenditure gain realised by the work of farmer				70.01
Interest on farming capital				30.31
				--
Income from the farm if free of debt . . .				100.32

The various items of expenditure include water dues or rates, land charges, purchases of small implements, etc., repairs to machines and buildings, amortisations, insurances, and the minor costs of administration.

Rents paid, plus the interest on the farming capital, present some analogy with the cost of production in the terminology adopted by the International Institute of Agriculture. In fact, taking as a basis the rents paid by tenants of the respective region, there is calculated in the province of Holland for capital in land and capital in buildings of the peasant farmers a rent paid which is added to the expenditure. All land owners thus find themselves placed on the same footing as the tenants, who are much the more numerous as a class, and in some provinces are even 80 per cent. of the whole.

In the areas where on the contrary the number of landowners is the larger the offices do exactly the opposite. Rented lands are taken with those which are owned by the farmer, and an interest claim to be charged on the farm assets is calculated for the lands of the tenants who become owners and the statistical results correspond to the agricultural structure of the country.

The receipts given above have been cleared. The purchase prices have been subtracted from the selling prices and account has been taken of the difference in the inventory values at the beginning and at the end of the financial year.

Increases in supplies in hand and, on occasion, in expenses incurred in advance for the crop of next year, farm products supplied to farm hands as wages in kind, produce supplied to the household and to subsidiary enterprises, letting of buildings reserved for the household, for minor agricultural occupations, and in certain provinces for the farming family, do not enter into consideration, so that the real gross return is higher than the total of the receipts as obtained by the accountancy office.

Similarly, the total of the expenditure is not so high as that obtained by calculating the cost of production, as understood by the terminology of the International Institute of Agriculture. The wage claim for unpaid labour of the farmer, taxes, decrease in stores, and, in some cases, insurances and expenditure incurred in advance for next year's crops, must be added to the expenses, and the rent ought to be the equivalent of the interest rate on capital represented by land. In the calculation of income, account should also be taken of the increase or diminution of the net total assets of the farm. Once these conditions fulfilled, the gain realised by the work of the farmer would be the profit or loss on total farm assets.

For reasons that will shortly be clear, it is no longer possible to compare the income as calculated by the Netherlands accountancy offices with the family farm earnings *i. e.*, "the portion of the gross return which the farmer and his family receive, in a certain length of time, as effective remuneration for the use of the net agricultural capital and for their work" (1).

The final result obtained by the Accountancy Offices is an independent income of an average farm holding free of debts, and apart from taxes.

The accountancy systems for the Netherlands are adapted to the special conditions of the country, and, while the main object is fiscal, the position of the peasant farmer is thereby made clear. The analysis of the receipts and expenses makes clear to the person responsible the manner in which he could if necessary rationalise his enterprises.

The study of the ratios existing between the constant and the variable costs places him in a position to decide whether it is better worth while to increase or reduce his various forms of capital. The greater part of the holdings being peasant holdings, it is advisable to reckon the income on the method followed by the Offices. The family farm earnings as determined by the Offices is that which remains to a peasant farmer who is free of debt and who does not pay taxes. They take no count of the interest brought in by invested capital, *i. e.*, net return, which is the standard more especially indicated for making clear the position of the large capitalist undertaking. In the last analysis, it is more important to maintain existence, than to calculate a commercial interest of which the return on capital and the labour wage are the constituents. The above explanations make it possible to realise the value of the figures in the following tables, which institute a comparison between certain provinces in the Netherlands in 1927 and in 1928. (See page 190).

The results for the province of Groningen are the least favourable. The best results are those of the province of Utrecht.

The results are taken from the publication of the Department "von Binnenlandsche Zaken en Landbouw" in 1929, "Verslagen en Mededeelingen van de directie van den Landbouw". It has not been possible to collect so large a number of results for 1928 as for 1927, as the figures do not appear in the Review mentioned above till two years after the closing of accounts. Other numbers of the *Algemeen nederlandsch landbouwblad* have been utilised and statistics of interest obtained.

The farming expenditure in 1928-29 are higher in the regions of Ablasserwaard, Eilanden and Middengewest than in 1927-28, but the yield has increased and in consequence, the gain realised by the work of the farmer.

(1) I.A.U.R. Prof.: Terminology and Bases for an International Accounting Agricultural Statistic founded upon Farm Accounting. Effingerhof A. G. Brugg.

Accountancy Results of Certain Provinces in 1927-28.
(Values per hectare in florins).

Provinces	Regions	Farming expenditure							Interest on farm capital	Total expenditure	Gain realised by work of farmer	Receipts
		Wages	Seeds	Forage	Fertiliser	Other exp.	Total	Rent				
Groningen.	Centrale Weide- streek	92.45	9.98	60.64	22.82	24.55	210.44	170.00	15.61	396.05	— 5.47	300.58
	Nordelijke Bouw- streek	162.08	16.13	17.03	43.61	32.09	270.94	170.00	10.86	451.80	— 29.79	422.01
	Western Kwartier Centrale Bouw- streek	125.49	9.61	37.06	27.49	29.63	229.28	160.00	13.10	402.38	— 0.84	403.22
	Klein Oldambt .	128.35	16.05	31.08	38.12	27.65	241.25	150.00	10.91	402.16	— 22.82	379.34
	Nieuw-Oldambt .	128.68	18.12	11.18	45.79	27.70	231.47	150.00	9.37	390.84	— 37.39	453.45
	Ould Oldambt .	141.15	15.29	15.32	30.05	30.41	232.22	170.00	7.65	409.87	— 63.71	346.16
	Noldstreek . . .	140.34	18.97	13.18	53.84	26.72	253.05	150.00	8.01	411.06	— 53.73	357.33
	Noldstreek . . .	134.43	14.16	14.29	39.48	43.81	226.17	150.00	8.04	384.21	— 15.80	368.41
Friesland	Kleweidestreek .	102.25	2.63	94.51	17.19	46.67	263.25	162.96	24.70	450.93	— 44.82	495.75
	Veenweidestreek .	75.76	0.13	113.32	13.95	41.75	244.81	146.63	24.58	416.02	— 43.34	459.36
	de Wouden . . .	77.17	1.28	126.91	20.27	39.94	265.57	122.19	21.85	400.61	— 1.04	407.97
	Klei Bouwsneck .	144.72	10.40	65.82	36.23	49.03	307.10	148.61	19.41	476.21	— 30.61	505.82
North Holland.	Middengewest . .	77.78	0.84	206.12	5.76	54.12	344.57	156.00	31.59	532.25	— 41.92	574.7
South Holland.	Ablasserwaard . .	88.73	0.08	342.03	8.48	37.42	477.64	119.13	29.40	626.17	— 10.17	636.34
	Krimpenerwaard .	117.74	—	671.87	14.99	28.16	832.76	156.92	40.62	1030.30	— 17.26 (1)	1018.04
	Gouda el Woerden	102.28	—	401.08	20.82	30.61	644.70	139.42	38.71	822.92	— 50.66 (1)	772.26
	Ellanden	162.54	17.75	61.15	76.26	66.33	257.02	134.92	19.51	508.46	— 66.94	575.40
North Brabant.	Noordwestelijke. zeekleigrouden .	154.32	17.79	36.20	77.19	78.90	331.40	118.85	19.51	469.76	— 36.70	506.46
	Maaskant zuidelijke et oostelijke zandgrouden	55.95	3.63	86.80	8.43	29.05	187.86	130.43	14.91	333.20	— 28.59	304.61
	zandgrouden	71.39	4.34	97.00	45.89	72.49	261.11	52.93	18.11	332.15	— 10.23	351.38
Utrecht.	Nordwesteleik (weide)	87.53	0.31	236.28	17.14	65.89	457.15	123.37	30.56	611.38	— 34.95	646.33
	Lopikerwaard . .	62.06	0.69	394.75	4.41	93.48	555.39	130.48	35.20	721.07	— 148.67	869.74
	Jjssel et Ouden Rijn	72.57	0.86	228.35	5.87	72.39	379.54	105.44	28.17	513.17	— 51.23	564.40
	Broemen Rijn . .	58.77	3.57	133.58	29.72	73.32	298.96	107.58	21.38	427.92	— 62.20	490.12
	Zandgebied . . .	76.90	3.55	217.47	4.10	38.77	940.79	127.02	24.06	491.87	— 93.56	585.42

(1) The results of Krimpenerwaard and of Gouda and Woerden, in the province of South Holland, show a less favourable earning capacity. Purchases of forage are higher; the receipts are also larger but the expenses have increased in proportion. It is however not possible to draw conclusions, as the number of accountancy results that can be checked is too small (7 for Gouda and 10 for Krimpenerwaard).

Results for certain provinces for 1928-29.

Province	Regions	Number of farms	Average area	Farming expenditure							Rent	Interest of farming capital	Gain realised by the work of farmer	Receipts
				Grassland	Arable	Wages	Seeds	Forages	Manure	Other exp.				
South Holland	Ablasserwaard . .	42	21.22	20.26	0.96	92.62	0.34	424.88	8.58	50.58	577.00	120.77	30.50	74.48
	Ellanden	36	41.33	18.78	27.55	166.95	15.68	52.32	47.34	66.52	348.81	134.27	13.57	80.38
North Holland	Middengewest . .	87	18.41	17.81	0.60	78.49	0.86	217.30	10.99	50.98	356.64	157.22	30.31	70.01
Friesland . .	Ondewater	14	19.32	18.88	0.44	94.47	0.49	409.94	9.52	61.79	579.21	183.41	28.31	59.11
	All regions . . .	412	44.92	7.78	37.14	—	—	—	—	—	x) —	10.34	—	495.69

(1) The dashes indicate that the results have not been given by the publication.

In the following table, the net income is shown for three regions for 1927-28 and 1928-29 respectively.

Net Income of a farm of average type free of debt.
(Values per hectare).

Region	Gain realised by farmer's work	Interest on farming capital	Income	Gain realised by farmer's work	Interest on farming capital	Income
Albasserwaard	10.17	20.40	30.57	34.48	30.50	104.98
Eilanden	06.94	10.51	26.95	81.33	18.57	99.90
Middengewest.	41.92	31.69	73.51	70.01	30.31	100.32

The interest on farming capital, the theoretical value entered in the expenditure is shown here, in order that it may be considered apart from the net income (or income on farm free from debt) which is the indication of the actual position of the peasant farmer.

The few figures which are available for 1928-29 appear to indicate that the earning capacity of Dutch agriculture was higher in 1928 than in 1927.

* * *

Verslagen en Nededeelingen van de Directie von den Landbouw, 1929, No. 2, The Hague.
Algemeene nederlandsch Landbouwblad, 17, 24, 31 October and 7 November 1929.

AGRICULTURAL LEGISLATION

Summary of Laws and Regulations.

SPAIN. — Real decreto dictando reglas para regular la adquisición del capullo de seda y el pago de un precio remunerador al productor — 11 abril 1930. — *Gaceta de Madrid*, No. 103 (13 abril 1930).

[This Decree grants producers during the month of September a premium of one peseta per kilogram of fresh cocoons sold on condition that the minimum sale price fixed by the Central Silk Office does not exceed 4 pesetas 50. This premium shall be reduced in proportion as this minimum price rises. It will only be granted to those producers who have previously registered their seeds with the Agronomic Service in the form laid down by the law of 4 March 1915. The Decree introduces provisions for encouraging the constitution of co-operative societies of silk cocoons. There shall be considered as such those co-operative societies, created by officially recognized agricultural societies, who shall establish a joint and unlimited liability, who shall submit their constitution for the approval of the Central Silk Society and which its intervention in the administration of its property. The Decree grants spinners a premium of 25 centimes per kilogram of fresh Spanish cocoons spun provided the customs duty laid down in article 14 of the Decree of 14 April 1929 is not raised.]

FRANCE. — Exposé analytique des dispositions contenues dans la loi de finances du 16 avril 1930, en matière agricole. — *Journal Officiel*, n° 93 (17 avril 1930).

[The law, after providing for a revision of the assessment of land not built over (art. 2 to 8) goes on to deal with forests; it reduces the charges payable on purchases or on donations between living persons of properties composed of woods or forests. Art. 33 of the law deals with agricultural credit, and provides that the exemption granted from the tax on revenue derived from credits, deposits and security money shall have retro-

active effect in respect of loans granted previous to 1 January 1928 accorded by the mutual agricultural credit banks ; it also exempts the current accounts of these banks from payment of the tax. The following article extends the right to membership of mutual agricultural credit banks and to benefit by loans accorded by these banks to chambers of agriculture, agricultural syndicates breeding societies, and to agricultural associations recognized by the law and dependent on the Ministry of Agriculture as well as unions and federations of such bodies. Art. 42 deals with fruit used for making cider and perry. These are made subject to the same formalities on circulation as ciders and perries ; they are also made subject to payment of the same duties ; for the purpose of this duty ten hectolitres of apples or pears are considered equivalent to three hectolitres of cider or perry. Art. 43 deals with the exportation and importation of rum, and art. 44 with the sale of rums and tafias. The tax payable on commercial turnovers is the subject of articles 53-58 which

1. fix a new assessment for transactions concerning wool ;
2. convert into a single tax the tax on commercial turnovers of wine merchants ;
3. apply the tax in question in the matter of transactions concerning milk, its bye-products and potatoes.

The law contains an interesting provision regarding the legislation with respect to sugars used in the preparation of food products intended for exportation (art. 62). Art. 64 deals with the fiscal legislation in respect of maize used for preparing starch. The duty payable is fixed at 25 francs per 100 kilograms of dry amidine and 150 kilograms of green amidine. The right of temporary admission is extended to maize employed in the production of starch intended for exportation. The rules for the application of this provision and the date when the duty itself will come into force will be fixed in a later Decree. Art. 182 deals with the electrification of rural districts and the following article lays down the rules for fixing the State contribution towards the rural electric systems Art. 184 regulates the travelling expenses of professors of agricultural and of chiefs of agricultural service. Art. 185 provides for increasing the numbers of donkey stallions in the national studs. Subsidies towards hydraulic and rural engineering works are granted by art. 233. Art. 235 lastly fixes the maximum amount which the Minister of Finances is authorized to withdraw from the Deposits and Consignment Bank for the grant of loans for favouring the intensification of agricultural production.

SWITZERLAND (Confederation). Ordonnance d'exécution de la loi fédérale du 5 octobre 1929 modifiant la loi du 22 décembre 1893 sur l'amélioration de l'agriculture par la Confédération. — 7 avril 1930. — *Recueil des Lois fédérales*, n. 12 (9 avril 1930).

[This law has been passed with the object of improving the breeding of large and small livestock. It awards premiums for sire bulls and for boars, he-goats and rams.

In the event of a bull sold and destined for another canton, being used for breeding purposes until the end of the utilisation period, the Federal super-premium will only be paid whether partially or fully, if the cantonal premium granted is paid in the same proportion either by the canton of origin or by that in which the bull is finally stationed.

In the event of extraordinary circumstance such as accidents, illness, emergency felling, inability to reproduce arising without owner's fault, the Federal super-premium may be paid in whole or in part even if the bull in respect of which a premium is paid is not used further for siring before the expiry of the utilisation period ; the condition is however laid down in this case that the cantonal premium is paid in the same proportion.

The Federal super-premiums due in respect of boars, he-goats and rams will be paid within seven months after their competition provided evidence is given that the animals in respect of which premiums are paid have been used for siring during that period. In the event of extraordinary circumstances such as accidents, illness, urgency felling, inability to reproduce arising without the owner's fault, the Federal super-premium may be paid in whole or in part even if the animal in respect of which a premium is paid is not used for siring purposes before the expiry of the utilisation period ; the condition is however laid down that the cantonal premium shall be paid in the same proportion].

FRANCE (INDOCHINA). — Décret portant création d'un office du riz en Indochine. — 10 avril 1930. — *Journal Officiel*, n. 91 (15 avril 1930).

This Decree sets up at Saïgon in Indochina a Rice Bureau for the cultivation, industrial preparation and the sale of rice. The administration and the financial organiza-

tion of this bureau will be laid down in Orders to be issued by the Governor General. Loans exceeding 3 million francs in amount must be authorized by Decree of the Council of State].

PARAGUAY. — Decreto N. 35782 que reglamenta la fabricación de licores en la capital y campaña. — 28 enero 1930. — *Diario Oficial*, No. 1802 (28 enero 1930).

[All liquor manufacturers are required to forward to the Technical Bureau of Internal taxation in the month of January of each year a form giving their name, business address, the address of the nearest distillery, the type and alcoholic degree of liquor prepared, the number of the municipal chemical analysis, the composition of each one of these products and the sanitary conditions of the factory. All liquor manufacturers are also required to keep two registers signed by the Department of Internal Taxation; the first of these registers must show what quantities of alcohol enter and leave the factory while the second deals with the preparation and sale of the liquors.

Liquors may only be prepared with rectified alcohol of strength not less than 94° Gay-Lussac. The receptacles for liquors and similar products of national production must be labelled and bear the seal of the Technical Inspection Bureau and the Internal Taxation Department. Liquor manufacturers shall each month declare on oath the quantity of alcohol bought and consumed and the quantity of products manufactured and sold].

ECUADOR. — Codificación de la Ley de Impuesto sobre Ventas comerciales e industriales. — 31 diciembre 1929. — *Registro oficial*, n. 233 (24 enero 1930)

[The amount of this tax is 1 % of the total value of the sales effected without deducting the costs, taxes, wages and other expenses which contribute to the net sale price. This tax must be paid by all whose regular livelihood is derived from commerce or industry and those who perform incidentally the commercial transactions envisaged in article 3 (nos. 1, 2, 4, 5, 11, 12 and 13) of the Commercial Code. Exemption is granted from commercial and industrial sales to, *inter alia*,

1. Agriculturists in respect of articles of primary necessity and home consumption which have been produced on their own farms and sold by them on the said farms or on the public markets.

2. agricultural producers in respect of articles of exportation sold directly to exporters or their agents whether they are delivered in the country itself or sent to the foreign importer on behalf of the exporter;

3. bakers in respect of bread sold;

4. agricultural co-operative societies founded for the acquisition of agricultural machines and implements and in respect of Sales to their members.

This tax will be paid every quarter, interest at the rate of 6 % per annum will be paid in the event of arrears. All merchants and industrialists are also required to pay an annual tax of two "sucres".

Merchants and industrialists are required to keep regular accounts which they must submit to the taxation officials.

A breach of the provisions of the present law is punished by fine ranging from 5 to 50 "sucres" and in the case of repetition of the offence, from 50 to 500 "sucres".

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INTERNATIONAL REVIEW OF AGRICULTURE

PART II

MONTHLY BULLETIN
OF
AGRICULTURAL ECONOMICS AND SOCIOLOGYECONOMIC AND SOCIAL CONDITIONS OF THE
AGRICULTURAL CLASSES

Some Considerations on the Rural Exodus.

In the course of the meetings of the Mixed Advisory Agricultural Committee, which acts as a liaison organisation between the International Institute of Agriculture and the International Labour Office and which met in Rome from 7 to 9 November 1929, a recommendation was made, *inter alia*, to these two institutions to proceed jointly to a study of the rural exodus as occurring in certain typical zones. With this object it was resolved to lay down in advance certain objective lines which might serve to guide the investigation of this problem. The following is a preliminary contribution in this sense.

The expression "rural exodus", if we follow strictly its derivation, can only be applied to a movement of population away from the country districts. The movement most generally discussed under the name of "rural exodus" is the transfer of population from the rural districts to the towns, but similar economic and social effects are produced by other movements of population, as for example by emigration from rural districts, or by other phenomena, which cannot be described as an "exodus", such as a failure of the natural increase of population. We must, therefore, not only define precisely what is meant by the "rural exodus", but determine what other phenomena must be grouped with it, if we are to study as a whole the economic and social problems to which the "rural exodus", amongst other causes, gives rise.

We have further to distinguish the cases in which the "rural exodus" and kindred phenomena are economically and socially harmful from the cases in which they are harmless or even beneficial. To use expressions which have recently come into vogue, we must determine when the "rural exodus" (or kindred phenomenon) is "pathological" and when it is "physiological".

Let us first examine what are the economic and social problems of the countryside connected with questions of the rural population.

Economic problems arise when there is a want of equilibrium between the demand and the supply of man-power in agricultural and other rural occupations, including farm-operators, whether owners or tenants, as well as the wage-earning labourers. When the supply of man-power is excessive, holdings tend to become too small to be economic and wages to be too low. In such cases a diminution of the supply of man-power is an economic advantage. Holdings can be enlarged and wages tend to increase. If, however, the diminution of man-power is such that the demand exceeds the supply, economic harm results, at any rate temporarily. If

there is an insufficient supply of farm-operators, farms may be abandoned or the land may be cultivated less intensively. If the supply of labourers is inadequate, wages may rise, though this does not always occur. If wages rise, the labourers who remain on the land are benefited, but the difficulty of making farming profitable is increased. The difficulty in obtaining labour may lead to the abandonment or less intensive cultivation of the land, which may, generally speaking, be regarded as an economic evil. It may, however, ultimately lead to a change of practice whereby production is maintained with less labour; in this case, a remedy has been found for the economic harm resulting from the diminution of the labour-force. Such a change of practice may also precede, and be the cause of a movement of population away from country.

Much has been written about the balance between town and country and it has been held to be an evil when this balance is disturbed by a movement of population from the country to the towns. But the expression is a vague one and no very clear idea seems to be attached to it. In a country which depended entirely upon its own agriculture for the production of food-stuffs, the balance between town and country would be disturbed if the country districts were no longer able to produce enough to feed both their own population and the town population, but no country is so completely isolated, and even if it were, the point of balance could be shifted by a change in agricultural practice. If we can suppose that the United States and China each became completely isolated, the proportion between agricultural and industrial population which would give an economic balance would be entirely different in the two countries owing to the difference in agricultural practice.

Sometimes the country is regarded as a reservoir of population from which the town population can be continually renewed, and the balance is held to be disturbed if the rural population is relatively so diminished that it can no longer renew the town population, but improved sanitary conditions in the towns may diminish or even do away with the need of any such reservoir of population.

There is a social problem inherent in all scattered populations—the difficulty of supplying the facilities and amenities of life. This difficulty is increased if the population is extremely poor, so that in the case of a highly congested population, the problem would probably be rendered less acute by a transfer of population that improved the economic position of those who remained. Generally speaking, however, the less dense the population, the more difficult the problem becomes, so that a diminution of population in country districts usually aggravates the existing social problem.

We have seen that economic problems arise from the diminution in the number of persons engaged in agricultural or rural occupations. The diminution which it is important to study is the absolute diminution. The relative diminution, in comparison with the number of persons engaged in other occupations, may be of interest in studying the general economic development of a country, but is of little importance in connection with agricultural or rural economic problems.

Social problems, on the other hand, arise from or are aggravated by the diminution in the rural population and here again the diminution it is most important to study is the absolute diminution. The diminution relative to the urban population is only of interest if we attach importance to the balance between town and country population.

In a new country, in process of being colonised, a rural district may be capable of absorbing not only the natural increase of the population, but a large number of immigrants as well. In a long-settled country, on the other hand, it is not usually the case that a rural district is capable of absorbing the natural increase of the population. Hence a transfer to the towns or to other countries of a part of the rural population is inevitable. Logically this must be described as a form of "rural

exodus", and, as it usually results in a *relative* diminution of the rural population it is sometimes regarded as an evil. But it does not increase the difficulty of providing the facilities and amenities of life, since no actual diminution of population results. Nor does such a movement usually reduce the labour-force available for agricultural and rural occupations.

An actual diminution in the population of a rural district may take place :

I. By a transfer of population :

- (a) By emigration to another country.
- (b) By migration to the towns.
- (c) By migration to other rural districts in the same country.

II. By an excess of deaths over births :

(a) owing to exceptionally high mortality, as in the case of war, famine or pestilence.

(b) Owing to a failure of the natural increase.

A transfer of population by emigration to another country or by migration to the towns may be regarded as forms of "rural exodus". So may migration from one rural district to other rural districts when we are studying separately the rural district from which migration takes place, but not if we are studying the country as a whole. Again a diminution of the rural population due to an excess of deaths over births cannot be correctly spoken of as a "rural exodus" though it may give rise to the same problems, economic and social, as a transfer of population, and equally calls for study. The expression "rural depopulation" may be used to cover any diminution of rural population, whether due to transfer or to an excess of deaths over births.

A diminution in the population of a highly congested rural district may be economically and socially beneficial, but, in general, any diminution of the rural population increases the difficulty in providing facilities and amenities and is, therefore, socially harmful.

A *tendency* to a diminution in the population of a rural district may be counteracted by a movement of population from the towns, or even from abroad, to the district, either to take up agricultural or rural occupations, or to live in the district while working in near-by towns.

A diminution in the number of persons engaged in agricultural or rural occupations may take place in the same ways as a diminution of rural population. It may also take place if those previously engaged in such occupations take employment in near-by towns while continuing to live in the country. In this case there is, strictly speaking, no "exodus", but the economic effects are the same as if they had actually transferred their residence to the towns.

A *tendency* to a diminution in the number of persons engaged in agricultural or rural occupations may be counteracted, wholly or partially, by an influx of persons from the towns or from abroad who take up such occupations.

If the man-power in the district has been excessive, a diminution of it is an economic advantage. If again, in a district not originally congested, changes in agricultural practice take place whereby the amount of manual labour required is reduced, a diminution of the labour force is not an economic evil. It is only when the labour force is so diminished that the demand for labour exceeds the supply that economic evil results. In this case we may speak of a "depletion of the agricultural and rural labour supply". The evil may sometimes be remedied, wholly or partially, by changes in agricultural practice.

We are now in a position to indicate what phenomena are to be regarded as forms of "rural exodus" and to classify the different forms of "rural exodus" and the kindred phenomena according as they are socially or economically harmful or not.

ECONOMIC AND SOCIAL EFFECTS OF THE

"Rural exodus" and kindred phenomena	Economic effects
<p>I. <i>Forms of "rural exodus"</i></p>	
<p>A. Transfer to the towns, to other countries or to other rural districts, of the natural increase of the population.</p>	<p>I. A. Usually harmless ; if the population is congested, beneficial.</p>
<p>B. Transfer of population to the towns, to other countries, or to other rural districts, resulting in</p>	
<p>(1) A diminution of the number of persons engaged in agricultural or rural occupations.</p>	<p>I. B. (1) Beneficial, if the number of persons engaged in such occupations was previously excessive. Harmless, or even beneficial if, owing to changes in agricultural practice, the amount of labour required has been reduced Harmful, if farms are abandoned or are less intensively cultivated, or if the supply of labour falls below the demand.</p>
<p>(2) A diminution of the rural population.</p>	<p>I. B. (2) In so far it involves a diminution of the number of persons engaged in agricultural or rural occupations, the observations under I B (1) apply.</p>
<p>II. <i>Kindred phenomena.</i></p>	
<p>A. Excess of deaths over births (a) owing to exceptionally high mortality, as in the case of war, famine or pestilence ; (b) owing to a failure of the natural increase.</p>	<p>II. A. In so far as it involves a diminution of the number of persons engaged in agricultural or rural occupations, the observations under I, B (1) apply.</p>
<p>B. Acceptance of employment in near-by towns by persons who were previously engaged in agricultural or rural occupations and who continue to live in the country.</p>	<p>II. B. The observations under I. B. (1) apply.</p>

"RURAL EXODUS" AND OF KINDRED PHENOMENA

Social effects	Remarks
<p>I. A. Harmless, except in so far as it may disturb the balance between the urban and the rural population.</p> <p>B. (1). Harmful in so far as it involves a diminution of the population. See I. B. (2). Beneficial, if the population was so congested as to be very poor and the transfer improves the economic position of those who remain.</p> <p>I. B. (2). Harmful as disturbing the balance between the urban and rural population, but more particularly because it increases the difficulty of supplying the facilities and amenities of life.</p> <p>II. A. Harmful because it increases the difficulty of supplying the facilities and amenities of life. If it is more pronounced in rural than in urban districts it also disturbs the balance between the urban and the rural population, and may be regarded as harmful on this account also.</p> <p>II. B. Harmless, there being no diminution in the rural population. Beneficial, if the economic position of those who take employment in the towns or those who continued to be engaged in agricultural or rural occupations is improved.</p>	<p>I. B. (1). May be counteracted if an influx takes place of persons from the towns or from other countries, or from other rural districts who take up agricultural or rural occupations. The harmful economic effects may be removed or lessened by changes in agricultural practice whereby production can be maintained with less manual labour.</p> <p>I. B. (2). May be counteracted if an influx takes place of persons from the towns, or from other countries, or from other rural districts who take up agricultural or rural occupations, or who, though working in the towns, come to live in the country.</p> <p>II. A. The remarks under I B (2) apply.</p> <p>II. B. The remarks under I B (1) apply.</p>

LAND SYSTEMS

Agrarian Reform in Poland (*continued*).

III. — RESULTS OF THE AGRARIAN REFORM.

(a) *Distribution of rural property and social structure of the rural population.*

The number of the rural holdings in 1921 was as shown in the following table :

Size of the holdings	Number of the holdings	Area in ha. apart from lands owned by rural communities	Total area in %	Area of arable lands in ha., apart from lands owned by rural communities.
Total	3,261,909	30,340,669	100 %	14,439,817
under 0,5 ha.	383,859	98,931	81.8	58,061
from 0,5 to 1 ha.	271,986	208,444		153,797
» 1 » 2 »	502,913	768,235		569,114
» 2 » 3 »	379,437	962,122		675,105
» 3 » 4 »	345,790	1,222,152		816,623
» 4 » 5 »	276,624	1,248,286	18.8	810,797
» 5 » 10 »	733,256	5,156,843		2,237,591
» 10 » 20 »	311,529	4,190,220		2,561,247
» 20 » 50 »	76,436	2,141,374		1,236,491
» 50 » 100 »	11,163	754,880		423,049
over 100 ha.	18,916	13,589,177	44.8	3,892,882

(1) General Census of 1921.

The general census of 1921 does not cover the lands of Upper Silesia nor of three districts of the territory of Vilno.

In the period from the beginning of 1921 to the end of 1926, 732,797 hectares were parcelled for the purposes proposed in the agrarian reform, and in addition, nearly 112,000 hectares have been granted for land settlement by ex-service men.

Parcelling operations have been carried out equally on the estates of the State and on those belonging to private persons, these latter having been parcelled by their owners without State intervention.

The estates belonging to the State have been for the most part completely parcelled out. The so-called "exclusions" amounting to an area of nearly 60,000 hectares in the course of this period are already accounted for in this figure of 732,800 hectares. On the contrary, private estates were for the most part only partially broken up and often on separate occasions.

Speaking generally, it is the estates and holdings of a certain size, more than 100 or even more than 180 hectares, in accordance with the later legal limit, which have been parcelled. Among the estates belonging to the State there are also very small units, measuring only a few ares. In view of the fact that the proportion of the area of these estates to the total area of the parcelled estates be-

longing to the State is very small, it may safely be assumed that the area of the holdings of over 100 hectares has undergone from 1922 to the end of 1926 a decrease of nearly 750,000 hectares. If to this figure is added nearly 80,000 hectares ceded mainly by large holdings as liquidation of servitudes, the total reduction will be nearly 830,000 hectares. The census of large property which was taken at the beginning of 1921 showed that private property of more than 50 ha. let in parcels amounted to 309,000 ha. while about 23,000 ha. of church property was so let. On the other hand, the census of rural holdings taken in the month of September of the same year showed that 220,000 hectares of rented and 90,000 hectares of land granted to farm servants but without servitude charges consisted of holdings of less than five hectares; out of 100 tenants of parcels, 54.7 were renting less than one hectare and 37.2 were renting from one to five hectares.

Undoubtedly, areas which have been parcelled by the large estates contained a part of lands rented in parcels, or lands belonging to the farm workers and such part was in the course of the census of September 1921 incorporated with the small holdings. If a suitable correction is made of the percentage of reduction of the holdings of more than 100 hectares, also in the case in which the total area of the rented parcels has been split up, the diminution of the area of the holdings of over 100 hectares will be expressed as 830,000 hectares less 309,000 hectares (a very small quantity only of church estates having been subjected to parcelling), that is to say 521,000 hectares, or a decrease of nearly 4 per cent* of the total area of holdings of over 100 hectares. On the other hand, service lands, or lands assigned to farm workers and to rural artisans to form part of their payment, are not to be deducted, as it is impossible for all rented lands and all service lands to have been subjected to parcelling at one and the same time.

If it is taken into consideration that it was agricultural land that was in the first instance subjected to the parcelling, which was applied to arable lands as well as to grasslands and pasturelands, and that the equivalent fixed in the course of the abolition of servitudes was mainly assigned on lands of this class, the diminution in agricultural land of the holdings of over 100 hectares must be admitted to be 10 per cent. in relation to the 5 1/2 million hectares of agricultural land on holdings of more than 100 hectares in total area.

In the course of the period of 5 years from 1922 up to the end of 1926 the area parcelled has been distributed as follows:

	Number	Area ha	Average area reckoned in ha
New holdings	38,978	376,475	9.7
Enlarged holdings	120,603	268,417	2.2
Special holdings	1,668	17,108	10.3
Residential colonies for officials, workmen, etc.	19,714	16,124	0.9
Soldiers' farm holdings	6,000	112,000	18.6

In the majority of cases the enlarged holdings were assigned to owners of holdings of less than from 5 to 6 hectares. The enlargement by an average of 2.2 hectares of each of the holdings of this group has increased by 250,000 hectares at least the holdings of less than 10 hectares. The group of holdings of less than 10 hectares has acquired an additional 350,000 hectares nearly, in the form of new holdings, which only in certain parts of Poland and in special conditions have to be more

than 10 hectares, while another 10,000 hectares represents the special (1) holdings of the same size group (some of the special holdings being more than 23 hectares) and the area representing the parcels assigned to workmen and employees brings up the total additional area to nearly 630,000 hectares. Adding 20,000 hectares representing the area assigned to soldier settlements, which on good land cannot be more than 10 hectares, and another 30,000 hectares representing the group known as the "exclusions", there is obtained as the total figure for the increased area of the less than 10 hectare group of holdings 680,000 hectares approximately; and when a correction has been introduced similar to that calculated for the large estates proportionate to the area rented, the figure obtained is 680,000 hectares *less* 309,000 hectares, or 371,000 hectares.

Areas which have been assigned to holdings in liquidation of servitudes and as sharing out of lands utilised in common do not enter into this calculation. No data are available for determining the extent of the holdings, which have been enlarged by means of these regulating operations. In the course of the five year period from 1922 to 1926, however, taking all cases, 28,030 holdings have gained 88,751 hectares by liquidation of servitudes and of these probably nearly 70,000 hectares are attached to holdings of a total area of less than 10 hectares.

To summarise the foregoing, these are the principal changes which have occurred in the distribution of rural property up to the end of 1926. There has been a diminution of the total area representing holdings of more than 100 hectares, such area amounting to probably 520,000 hectares at least, or 4 per cent. of the total area of these holdings, which form nearly 10 per cent. of the area of agricultural land.

In the course of the same period, the holdings of under 10 hectares have increased by at least 440,000 hectares (*viz.* 371,000 *plus* 70,000 hectares); consequently the total area of the holdings of from 10 to 100 hectares could be modified only within the limits of about 80,000 hectares (520,000 *less* 440,000 hectares). The holdings of from 10 to 20 hectares, representing 13.8 per cent. of the total area, may be to a certain degree affected by these changes; next to a less considerable degree the holdings from 20 to 50 hectares which represent 7.1 per cent. of the total area, and then in cases quite exceptional the holdings of from 10 to 100 hectares which represent hardly 2.5 per cent. of the total area.

To maintain exactness there should still be placed on the side of the losses of large property and of the gains of small property 12,819 hectares which were parcelled by the State Agricultural Bank up to the end of 1926, 38 per cent. of which was earmarked for independent holdings, 21 per cent. for enlarged holdings, 17 per cent. for former farm servants and 24 per cent. for other objects, special holdings, industries, agricultural centres, etc.

A consolidating policy has great importance for small holdings as the production of consolidated lands is usually doubled; as a result of this policy, 629,321 hectares have been consolidated since 1918 up to the end of 1927. An equally important increase of production follows on the liquidation of servitudes, such increase being noted merely on the lands from which these charges have been removed but also on the areas assigned by way of equivalent. This equivalent assigned up to the end of 1927 amounts to 174,376 hectares. In addition sharing out up to an area of 11,374 hectares has been effected in the case of lands held in common.

(1) Special holdings include "centres" and the areas suitable for special branches of production, e. g., fish ponds, peat bogs, mills, etc.

In accordance with these calculations, it would seem that the number of 3,115,394 holdings of less than 20 hectares in total area as returned in the census of 1921 must have shown an increase at the end of 1926 by the addition of from 20,000 to 30,000 new holdings, nearly five thousand soldiers' settlements and from 1000 to 1200 special holdings. Subtracting 333,000 holdings of less than 0.5 hectares, as with such dimensions the dwelling house practically dominates the parcel, the figure obtained for holdings of rural type of from 0.5 to 20 hectares is approximately 2,800,000. With these may be classed 76,000 holdings of the type of large peasant holding of from 20 to 50 hectares. On the other hand the 11,000 holdings of 50 to 100 hectares must be recognised as belonging for the most part to the type of holdings known as large farms. In the above calculation, account is not taken of the increase which has taken place since 1921 in the number of holdings, as the result of the division of large rural holdings into smaller ones; for such division the authorisation of the Land Offices, in accordance with the Decree of the Council of Ministers of 1 September 1919, is not required (*Official Journal of the General Land Office*, No. 1) in the case of rural property, and the limits of these divisions are determined only by the provisions stated in Part II of this article. (See *Review*, May 1930).

Before the consolidation, peasant holdings generally consisted of different types of cropping, such as arable land, grassland pastures, gardens, forest land, etc., not forming separate units. In accordance with the provision of art. 6 of the law of 31 July 1923 on the consolidation of lands each one of these concerned in the consolidation obtained, on the territory subjected to it, in exchange for the lots which he had held up to that time, a new lot of equivalent value, and of a kind as nearly as possible resembling the type of the main part of the parcels which he formerly possessed. In consequence, the greater number of the holdings consist of as many lots as there exist kinds of principal types of cropping in the consolidated village, and according to the provisions in force, only in exceptional cases may the different croppings be allowed on at most two lots. At the present time no statistics are available making it possible to determine the average number of the isolated lots included in the peasant holdings after the carrying out of the consolidation operations.

Without taking account of the parcelling effected by the State Agricultural Bank, and leaving aside the problem of soldier settlement, the results of the parcelling effected in the course of the years are shown in the table on page 206.

In this table there may be noted a tendency to the artificial preponderance of the area occupied by the new holdings, the average areas of which fluctuate between 9.3 hectares in cases in which independent holdings have been formed, such holdings representing 52.5 per cent. of the parcelled area, and 14.4 hectares in the case of the special holdings which represent 2.9 per cent. of the parcelled area, while the average area is 17.4 hectares for the remaining holdings, purchased to constitute State property or sold to independent institutions of a social character, such holdings representing 8.6 per cent. of the area which has been parcelled.

Generally speaking in the existing conditions of Polish agriculture all these holdings belong to the group of average peasant holdings.

In noting the development of holdings of this type, it will be seen that the proportion to the whole of the areas used for the formation of new independent holdings shows a reduction in the course of the period from 1919 to 1926, dropping from 61.4 per cent. in 1919 to 47.2 per cent. in 1926. There is also a reduction in the proportion of the area occupied by the special holdings.

On the other hand, the relative reduction of the area occupied by holdings of

Years	Independent holdings				Enlarged holdings				Special holdings			Residential colonies for workmen, officials, etc.		
	Number	Area in ha.	% of the area parcelled used for independent holdings	Average area of holdings in ha.	Number	Area in ha.	% of area parcelled used for enlarged holdings	Average area of holdings	Number	Area in ha.	Average area	Number	Area in ha.	Average area
1919	1,026	8,788	61.4	8.5	1,345	3,405	23.9	2.5	14	115	8.2	178	239	1.3
1920	4,441	38,096	51.3	8.5	9,499	24,886	33.4	2.6	74	3,232	43.0	1,072	1,604	1.5
1921	12,784	118,249	56.3	8.3	20,961	56,700	28.2	2.7	263	8,601	33.0	2,252	3,718	1.6
1922	9,591	108,561	58.0	11.8	19,474	50,654	27.0	2.6	296	4,092	13.2	2,064	3,175	1.5
1923	7,590	72,213	54.0	9.5	21,330	45,421	34.0	2.1	166	3,776	22.7	1,961	2,846	1.4
1924	5,441	49,298	45.3	9.0	20,332	44,087	40.8	2.2	828	3,528	4.2	2,812	2,984	1.0
1925	5,047	50,865	50.2	10.0	18,502	38,770	38.2	2.1	187	2,002	11.1	7,672	2,890	0.8
1926	11,309	95,538	47.2	8.4	40,965	83,185	41.1	2.0	191	3,625	18.9	4,185	4,229	1.0
Period 1919-1926	57,179	536,558	52.5	9.3	152,408	347,358	33.9	2.3	2,019	29,146 (1)	14.4	22,216	21,680 (2)	1.0

(Apart from soldier settlement and from the parcelling effected by the State Agricultural Bank)

(1) that is to say, 2.9 % of the area consolidated.

(2) that is to say, 2.1 % of the area consolidated.

(3) In the period 1919-1926 there were reserved for the State and for independent institutions of a social character 87,579 hectares, or 8.6 per cent of the area parcelled, the average size of the parcel so reserved being 17.4 hectares.

these groups makes larger the area of the group of enlarged holdings, 23.9 per cent. of the whole area subjected to parcelling being devoted to enlargement of holdings in 1919, while in 1926 the proportion was 41.1 per cent. of the whole.

In connection with the above-mentioned tendencies of development it should be noted :

(a) that the increase in the number of the new holdings of average size, originating in the parcelling of larger holdings, is much slower ;

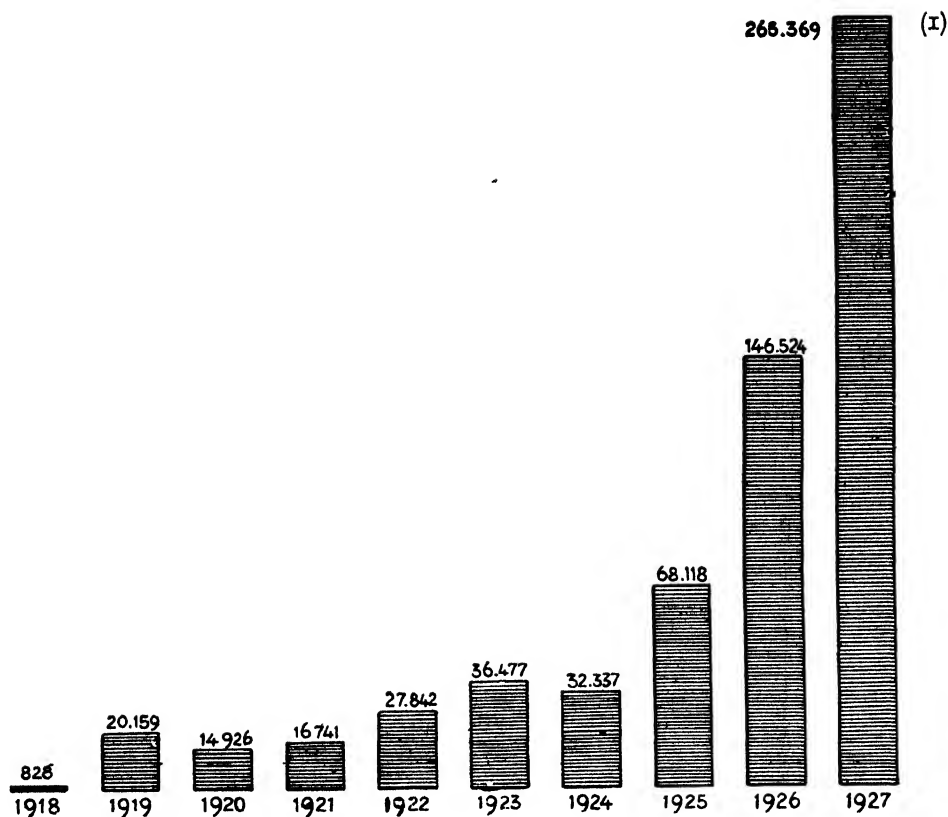
(b) that there is a much stronger tendency towards enlargement of the very small existing holdings up to size of average holdings, by means of the allocation of supplementary lands to these holdings.

It should be noted that under the conditions of Polish agriculture the enlargement of a small holding to the size of an average holding is not merely a question of the direct increasing of the area of the plot, but also in the majority of cases involves consolidation the effect of which is to double the production of lands so treated.

The following areas have been consolidated in the course of the different years (see graph A).

Years	Area consolidated
1918	828
1919	20,159
1920	14,926
1921	16,741
1922	27,842
1923	36,417
1924	32,337
1925	68,118
1926	146,524
1927	265,369

GRAPH A. — CONSOLIDATED AREA DURING YEARS 1928 to 1927, IN HECTARES.



(1) Provisional figures.

In the course of the first quarter of 1928, according to provisional reports, 52,497 hectares have been consolidated, while the corresponding figure for the first quarter of 1927 was 32,122 hectares.

The table which has just been given is not modified by the parcelling policy carried out over an area of 12,819 hectares up to the end of 1926 by the State Agricultural Bank which employs similar methods.

Under the policy of soldier settlement 136,201 hectares have been parcellled up to the end of 1927, and it may be noted that in view of the agricultural conditions of the eastern borders of Poland the average size (17.6 ha.) of the holdings formed in pursuance of this policy brings them into the category of average peasant holdings.

The area of 1,022,000 hectares which in the course of the period 1919 to 1926 has been parcellled by the Land Offices, apart from soldier settlement and the parcelling effected by the State Agricultural Bank, has been distributed among the different classes of purchasers as shown in the table on page 208.

This table compared with the two tables preceding and with the one that follows indicates the existence of an increasing tendency to render independent the

Number of Purchasers.

Year	Total of numbers	Landless	Owning an insufficient quantity of land	Enlarging their holdings	Not previously farmers	Total
		%	%	%	%	%
1919	2,563	35.8	54.1	8.3	1.8	100
1920	15,077	26.2	65.3	6.5	2.0	100
1921	36,198	32.9	58.9	6.2	2.0	100
1922	31,445	28.4	58.8	8.8	4.0	100
1923	31,047	25.0	68.9	8.0	3.1	100
1924	29,402	19.7	62.6	11.2	6.5	100
1925	26,164	20.4	65.4	7.4	6.8	100
1926	56,739	19.3	66.8	7.0	6.9	100
	228,635	24.3	63.1	7.8	4.8	100

holdings already existing by allotting to them a sufficient quantity of land. The table of the average sizes of the newly formed holdings (see Part I. Legal Bases of the Agrarian Reform) shows that this type of holding coincides with the independent holdings, as their average measurement, from 9 to 10 hectares, adequately ensures their independence in the conditions existing for Polish agriculture.

In the course of the period up to the end of 1926, the requirements of 9,228 farm workers and of 20,966 tenant farmers, were satisfied. The former class must be reckoned as agriculturists who become independent.

As further consequences of this situation an increase is noted of persons who have an insufficient quantity of land, and a decrease in the numbers of landless persons and of those who have a sufficient quantity, and whose requirements have been met. A certain increase in the number of non-agriculturists whose needs were met must be attributed to the relative enlargement of the areas set aside for workmen's or employees' colonies in the course of 1924 and 1925, during which period the percentage of these areas was increased in proportion to the total of the parcelling up to 2.7 per cent. in 1924 and up to 2.9 per cent. in 1925. The average sizes of these lots were in 1924 one hectare and in 1925, 0.3 hectare.

Some data in respect of the persons who have benefited by the agrarian reform follow :

Year	Landless persons		Persons having an insufficiency of land		Persons enlarging their independent holdings		Not previously agriculturists		Total
	Total	%	Total	%	Total	%	Total	%	
1919	918	35.8	1,386	54.1	214	8.3	45	1.8	2,563
1920	3,952	26.2	9,848	55.3	982	6.5	295	2.0	15,077
1921	11,907	32.9	21,331	58.9	2,255	6.2	705	2.0	36,198
1922	8,933	28.4	18,501	58.8	2,757	8.8	1,257	4.0	31,448
1923	7,703	25.0	19,849	63.9	2,468	8.0	967	3.1	31,047
1924	5,789	19.7	18,408	62.6	3,285	11.2	1,920	6.5	29,402
1925	5,344	20.4	17,086	65.4	1,946	7.4	1,785	6.8	26,164
1926	10,927	19.3	37,940	66.8	3,961	7.0	3,902	6.9	56,739
in the course of the period 1919-1926	55,553	24.3	144,348	63.1	17,868	7.8	10,876	4.8	228,635

As is shown by the table, persons who have benefited by the agrarian reform up to the end of 1926 are distributed as follows : 144,348 persons, whose holdings were inadequate in extent, 17,868 agriculturists who enlarged their independent

holdings, and 55,533 purchasers who were entirely without land of their own. The total is thus 217,000 persons who were previously engaged in agriculture who benefited by the agrarian reform.

The census of 1921 shows 16,854,736 persons connected with agriculture.

In relation to this number, the percentage of those who benefited by the agrarian reform up to the end of 1926 is 1.25 reckoning by individuals and from 4 to 5 per cent. if families are taken into consideration.

In the calculation above no account is taken of the parcelling effected by the State Agricultural Bank, nor of what is known as soldier settlement, by means of which nearly 7600 settlers were placed on the land up to the end of 1926.

In principle the lots formed in the course of parcelling are handed over without buildings to the purchasers and only buildings already existing on the parcelled estates are adjudged to them.

In addition purchasers obtain credits for the purposes of construction of farms and for the purchase of live or dead stock. In virtue of special laws, soldier settlers who own lots on the bases of free grants obtain assistance in building material and in cash. In general holdings formed in the course of parcelling are brought under cultivation with the assistance of the funds of the settler himself. In regard to the purchase of live stock, the owners of lots benefit not only by special land settlement credits for the purposes of investments, but also by stock raising credits, granted by the State to all agriculturists.

(b) *Land and Agricultural Credit.*

Long term mortgage credit, which is of the first importance for the development and maintenance of agriculture up to a certain level, was almost completely destroyed in Poland in the course of the war, and in view of the absence of available capital and the high rate of interest, the restoration of this type of credit during the last few years has been too slow to do more than meet a small proportion of the requirements of agriculture.

The following six principal credit institutions grant long term mortgage loans for agricultural purposes: the State Agricultural Bank, the Bank of National Economy, the Warsaw Mortgage Credit Company, the Poznań Mortgage Credit Company, the Lwów Mortgage Credit Company, and the Mortgage Bank of Vilno.

The table following gives the number and the amount of the mortgage loans granted in the course of the years 1925, 1926 and 1927.

	1925		1926		1927	
	Loans made	Amount in 1000 gold fr.	Loans made	Amount in thousand gold fr.	Loans made	Amount in 1000 gold fr.
State Agricultural Bank	30	108	2,125	4,410	9,589	24,155
Bank of National Economy	1	80	56	3,234	—	14,500
Warsaw Mortgage Credit Society	804	13,935	76	1,269	—	25,656
Poznań Mortgage Credit Society	189	8,037	97	5,900	—	7,765
Lwów Mortgage Credit Society	547	6,411	58	1,038	173	9,895
Mortgage Bank of Vilno	84	834	1	5	54	893
Total	1,635	29,405	2,413	15,856	(1)	82,954

(1) Data relating to the number of the loans not available.

It will be noted that in the course of the year 1926 the number of loans made increased and that at the same time their total amount in gold francs declined.

The former phenomenon is explained by the development of the credit policy of the State Agricultural Bank in connection with the increase in the parcelling of private lands in the course of 1926. The decline in the amount of the loans made is the result of the economic crisis which occurred in the course of the second half of 1925 consequent on the fall in the zloty, and the nominal value of the mortgages remained at the same level (80 per cent.) although the actual value, if it is taken into account that the mortgage notes are expressed in gold zloty, becomes much less. At the same time, on the Exchange the 8 per cent. mortgage notes of the State Agricultural Bank and of the Bank of National Economy rose from 92 to 93 per cent. of their gold value, the issuing activity of these Banks gradually increased, and in 1927 loans were made for a total of 82,954,000 gold francs, that is, for nearly six times more than in 1926.

The development of the operations of the State Agricultural Bank is illustrated by the following table:

	1926				1927				1928
	millions of zloty								
	quarter				quarter				quarter
	I	II	III	IV	I	II	III	IV	I
<i>Assets</i>									
Bills discounted	15.4	16.7	21.6	17.2	20.9	27.7	32.4	34.4	36.2
Loans on short term	19.0	25.7	36.2	29.8	39.1	69.2	91.1	91.3	93.7
Mortgage loans	0.4	0.6	2.0	4.5	7.9	13.9	18.2	41.4	50.7
Borrowers from funds administered . .	30.5	34.9	43.4	51.4	58.0	67.0	77.8	88.3	103.9
<i>Liabilities</i>									
Investment of Treasury	25.8	25.4	23.1	22.5	29.9	43.7	74.6	63.5	63.5
Deposits	2.6	4.7	9.0	7.4	16.6	31.6	34.3	32.7	24.5
Total	108.3	122.1	144.7	155.6	201.7	261.3	332.3	660.9	466.3

The above table indicates the totals of certain headings of the account at the end of the month of each quarter.

The rate of interest on the mortgage notes of the long term credit institutions was, before the world war, from 4 to 4 and a half per cent. per annum. At the present time the greater part of the mortgage notes are issued at 8 per cent. with the exception of the mortgage notes of the Poznań Mortgage Credit which are at 6 per cent. In the course of the first quarter of 1928 the rate of interest of the mortgage notes of the State Agricultural Bank and of the Bank of National Economy has been reduced to 7 per cent.

Following on the decline in values in 1925-26, the rate of real interest on mortgage loans was from 11 to 15 per cent. without reckoning amortisation and the "grosz" of the administration tax; at the present time, in consequence of a rise which has taken place, the rate is less than 10 per cent.

The amortisation periods for loans differ in the different institutions. For private banks, they do not usually exceed 15 to 16 years and a half. The period differs for the loans made by the different State Banks; the State Agricultural Bank grants loans for 10, 20 and 30 years, according to the requirements of the borrower, the Bank of National Economy fixes it at 13 ½, 20 and 35 years. The supplement known as "grosz" for the administration varies from ½ per cent. at the Bank of National Economy up to 1 per cent. at the State Agricultural Bank. As well as credit in mortgage notes, there is a long term credit granted usually on the State funds for objects relating to the reconstruction of the agrarian system,

for improvements, encouragement of stock breeding and the dairy industry. The rate of interest on these credits is much less than that of the credit in mortgage notes and amounts to 4 to 5 per cent. In the course of 1926, the figure for the loans made out of the funds of the Ministry of Agrarian Reforms reached 11,973,700 zloty, for loans made out of the funds of the Ministry of Agriculture for purposes of stock breeding and of the dairy industry, 2,314,000 zloty, and 4,475,200 zloty for improvements. Out of the funds of the Ministry of Public Works 7,203,600 zloty have been allocated for purposes of reconstruction. In the course of 1927, the loans made out of the funds of the Ministry of Agrarian Reforms have amounted to 12,720,794 zloty, out of the funds of the Ministry of Agriculture for the purposes of stock breeding and the dairy industry 4,669,911 zloty, and for improvements, 8,451,690 zloty; in addition, out of the funds of the Ministry of Public Works, 8,192,065 zloty.

The figures above mentioned show that the credits granted out of the State funds in 1926, amounting to nearly 26,000,000 zloty in all, were much larger than the credits in mortgage notes which amounted to 15,800,000 zloty. During the year 1927 this situation underwent a change and the credits in mortgage notes (82,954,000 gold francs) exceeded by more than four times the credits given out of State funds which amounted to 34,034,450 zloty or nearly 20,000,000 gold francs although these latter credits amounted to over 8,000,000 zloty more than in 1926.

Short term credits are chiefly given by the State Banks: by the State Agricultural Bank to small and average holdings, by the Bank of National Economy¹ to large estates. In addition considerable sums are lent by the Post Office Savings Bank and by the Bank of Poland. The part of the district Savings Banks (popular banks) and of the co-operative credit societies in the organisation of long term credit is reduced in general to the rôle of intermediary between the institutions mentioned above and the small farmers.

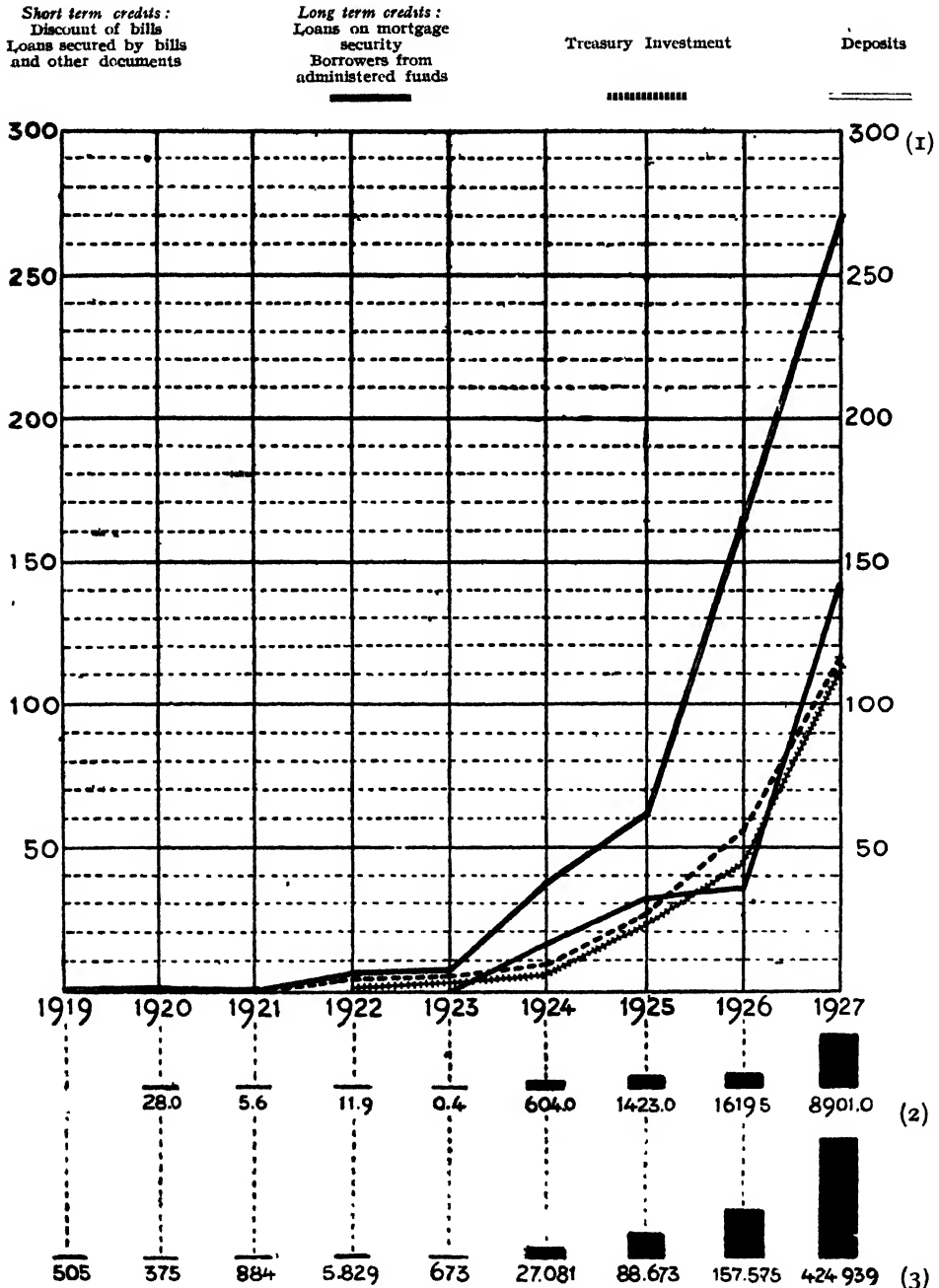
The situation as regards the indebtedness of agriculture in short term loans on the guarantee of bills of exchange was on 1 January 1927 and on 1 January 1928 as follows, in thousands of zloty (see also Graph. B.)

	January 1927	January 1928
State Agricultural Bank	52,555	124,822
Bank of National Economy	14,740	33,476
Bank of Poland directly	7,258	10,200
Bank of Poland through other banks . . .	3,129	500
Post Office Savings Bank (1)	5,262	2,582 (1)

The above table shows that the most important assistance is that given by the State Agricultural Bank which secures working capital to agriculture mainly through the agency of the central and local co-operative organisations. Credits for the co-operative societies formed on 1 January 1927, 50.1 per cent. of the total amount of the indebtedness, and on 1 January 1928, 52.2 per cent. The State Agricultural Bank grants in addition to agriculture credits by the intermediary of the district

(1) The Post Office Savings Bank ceased in 1927 to make loans directly to farmers; it merely grants them to co-operative organisations.

GRAPH B. — STATE AGRICULTURAL BANK. LOANS MADE AND WORKING CAPITAL, OBTAINED.



communal credit and loan banks. The credits for the communal banks formed on 1 January 1927, 12.5 per cent. and on 1 January 1928, 18.5 per cent. of the total amount of the indebtedness. Nearly 18 per cent. of the indebtedness in short term credits consisted at the beginning of 1927 of loans granted to enterprises of agricultural commerce and of agricultural industry, while the percentage on 1 January 1928 was 16.7. Independently of the loans made for the general requirements of farmers, the State Agricultural Bank has assigned credits, out of the funds administered by the Ministry of Agriculture, to special objects and in particular to stock breeding undertakings and to co-operative dairies, for advances of seeds, for chemical fertilisers, improvements and for pisciculture.

The period within which loans must be repaid differs in the different institutions, and varies from three months to one year. The Bank of Poland and the Bank of National Economy give credits of three months and six months at most; the State Agricultural Bank grants loans for from six months to one year but in many cases extension is granted beyond these periods.

The rate of interest on these loans was from 18 to 20 per cent. in 1925 and fell to 12 per cent. in 1927. It may be of value to quote statistics relating to other short term credit institutions, which will undoubtedly take a more important part in the future than at present in the function of supplying working capital to agriculture. Thus on 1 January 1927 the following institutions were engaged in this way in Poland:

1. 2,304 co-operative credit societies, owning 38,102,000 zloty in deposits;
2. 198 popular banks including 97 urban banks and 101 district banks. The district banks granted in 1926 loans for a total amount of 23,420,000 zloty;
3. 237 communal credit banks on the territory formerly Russian; the capital declared of these was 1,015,000 zloty and the paid up capital was 759,000 zloty; in the course of 1926, they made loans for a total amount of 2,927,700 zloty.

The above statistics relate to the year 1926. It should be noted that in the course of 1927, for which year statistics are not yet available, the activity as well as the number of these institutions considerably increased.

In accordance with the statistics of the Union of Polish Agricultural Organisations quoted by M. A. Poplawski in a report submitted to the conference at the Economic Committee of Ministers in November 1926, the general indebtedness of large estates in Poland was valued for the owners of large farms (more than 50 hectares) at nearly 111 zloty per hectare, half in long term credit on terms more or less advantageous, half in short term credits on terms which were often exorbitant.

Taking into consideration that the average price of the land was at the time nearly 800 zloty per hectare, the general indebtedness of the owners of the large farms did not exceed from 12 to 15 per cent. of the value of the land (1).

Mortgage long term credit cannot be applied as investment credit for new holdings formed in the course of parcelling, in the first place because it is too dear, and in the second because frequently mortgages of real property arising out of parcelling are not in order.

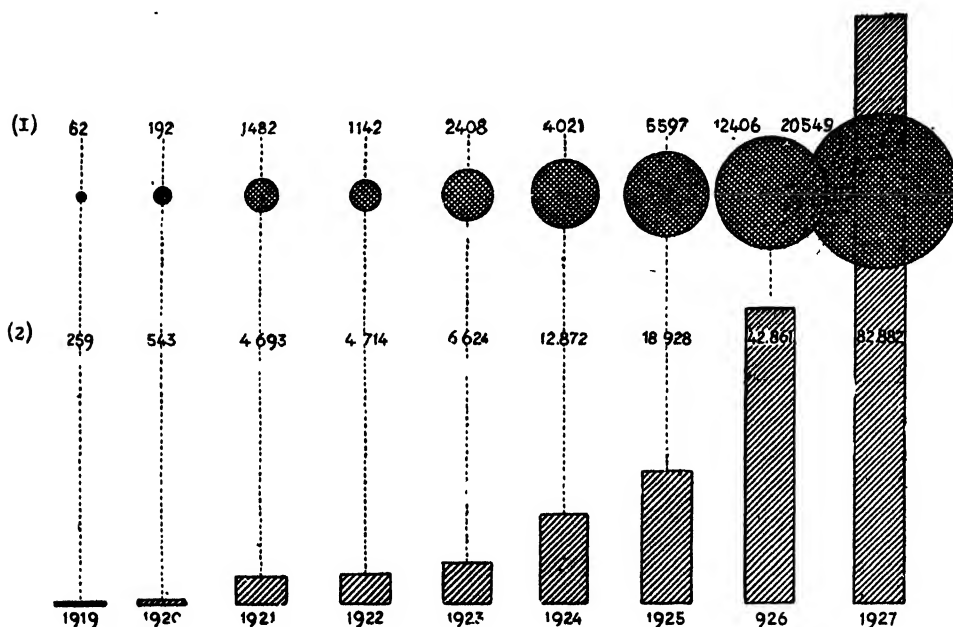
With a view to ensuring to holdings newly formed a more advantageous credit, a special credit has been established for settlers. Out of this fund loans in

(1) *Agricultural Economy* by Dr. Ernest Laur, translated and adapted to the requirements of Polish farmers by Dr. Witold Staniewicz, professor at the Łódź Polytechnic School, Minister of Agrarian Reforms, pages 111, 112, 116 and 117.

cash have been made for the purchase of lands arising out of the private parcelling operations but only as supplementary to the mortgage loans made by the State Agricultural Bank, as well as loans for investments at 4 per cent. repayable within period of from 5 to 15 years.

In order to make it possible for owners of holdings who cannot at the time supply a mortgage guarantee, to profit by the credits, temporary credits are largely employed, which are made either from the funds of the State Agricultural Bank or from the special credit funds.

GRAPH C. — AREA ASSIGNED IN THE COURSE OF THE LIQUIDATION OF SERVITUDES DURING THE YEARS 1919 to 1927.



(1) Number of holdings dealt with. — (2) Area obtained as equivalent in hectares.

c) *General Development of the Agrarian Reform.*

A very strong desire for land had been felt by the rural population and as soon as the restored Polish State came into existence, the demand was insistent for the satisfaction of this need. The simplest form was to divide up the large estates among those of the rural population, who were inadequately provided with land or completely without land. As the result, the period was marked by the appearance of an agrarian reform in its most simple form, based on the parcelling of the State lands as well as of the private estates, carried out either directly by the owners, or with the assistance of authorised institutions. No attempt to encourage an economic level higher than that of existing holdings or of those newly formed was as yet made by means of a consolidation, carried out according to plan, and combined with enlargement of holdings, liquidation of servitudes, partition of lands held in common and exchange of lands, nor any to ensure a certain security from

further division of the holdings, nor to confer on the whole agrarian structure a stability which might render likely the influx of social capital under the form of mortgage credit, or credit for the increased consumption of artificial fertilisers, concentrated stockfeeds, etc.

The situation is made clear by the table following (See also graphs A, C, D) :

Parcelling, in hectares.

Year	Carried out by the State	Soldier settlement	Private	Carried out by the State Agric Bank	Total	Area consolidated ha.	Area allotted in the course of abolition of servitudes
1919	8,175	—	6,084	—	14,209	20,159	259
1920	23,066	—	51,195	—	74,261	14,926	543
1921	71,285	23,006	129,769	—	224,060	16,741	4,693
1922	63,188	34,647	128,803	—	221,638	27,842	4,714
1923	47,979	30,016	85,516	—	163,511	36,477	6,624
1924	42,943	23,915	65,785	—	132,643	32,337	12,872
1925	36,085	15,044	65,191	5,078	121,398	68,118	18,928

During this period the area of the consolidated holdings consisted of less than one third of the area of the newly formed holdings including the area used to enlarge the holdings that existed previously, and the abolition of servitudes went on slowly and not in proportion to requirements.

The efforts of the agents directing the agrarian reform have been concentrated on establishing between the different types of operation a relation making it possible to proceed to parcelling and to carry out at the same time : 1. consolidation, 2. abolition of servitudes and other charges, 3. land improvements and, 4. the application of financial aid or aid in kind so as to enable the holdings thus reorganised to make at least the first step towards the intensification of agricultural production.

The results of the agrarian reform during the course of the last period of two years from 1926 to 1928, may be shown as follows :

Parcelling in hectares.

Year 1st quarter	Executed by the State	Soldier settlement	Private	Executed by the State Agricultural Bank	Total	Area consolidated in ha.	Area allotted in the course of abolition of servitudes ha
1926	68,323	8,240	133,084	7,741	218,288	146,524	42,861
1927	67,932	1,336	164,640	5,071	238,985	265,369	82,882
1928	4,828	—	56,047	545	61,420	52,497	21,066

These latest results of the agrarian reform show that :

1. The area of the annual parcelling exceeds the provisions of the law of 28 December 1925 relating to the execution of the agrarian reform, that law providing for 200,000 hectares yearly.

2. The parcelling effected by the State directly is decreasing in proportion to the parcelling executed by private persons under State supervision.

3. The liquidation of servitudes is going on briskly, and is an important factor in the increase of production, as in consequence of abolition of servitudes, the level of cultivation of lands freed, as well as of the areas obtained in exchange, is considerably raised.

4. There is a striking impetus given to consolidation policy which takes on a quite special importance in view of the fact that in the course of parcelling special pressure is exerted to allot to the very small holdings under consolidation the lands required. The production of lands consolidated is almost doubled by the process.

The above results seem to show that the scheme described in this article, the object of which is to raise to a higher economic level independent farm holdings, has been properly understood by the Polish nation and that effective support has been forthcoming, if opinion can be based on the growth of the consolidation policy which is evidence of a widespread social initiative, and on the parcelling policy, in view of the enlargement of holdings by the voluntary parcelling of the surplus portions of large holdings, and finally by the voluntary abolition of servitudes. The land improvements that have been already undertaken over large tracts have also contributed to raise the general economic level. As regards the granting of credit facilities essential for the initial steps towards a higher degree of farming, it may be stated that the credit operations of the State Agricultural Bank have reached the limit which the funds of the Bank allow (see p. 209 and foll.).

Credits granted on long term and not repaid amounted on 31 December 1927 to 41.4 million zloty, loans falling due to 112 million, credit for fertilisers to 17.8 million and credit assistance during consolidation to 10 million zloty. In the course of the first quarter of 1928, loans to the amount of 1,865,000 zloty have been made to consolidated farm holdings; for civil and soldier settlers the figure was 4,957,000 zloty and the liabilities consequent on purchases of chemical fertilisers amounted to 15.7 millions.

The day on which the law of 28 December 1925 relating to the execution of the agrarian reform came into force, the new law of the Constitution of 17 March 1921 (*Law Gazette of the Polish Republic*, 1921, N. 44) in which provision was made for the introduction of the agrarian reform on the bases detailed in the law of 28 December 1925, was already in execution. In art. 99, clause 2, of the Constitution the following statement is made:

"The land, which is one of the most important elements in the existence of the Nation and of the State cannot be passed from hand to hand without limitation. Legislation will determine the rights accorded to the State of proceeding to the expropriation of land and of regulating its circulation, always taking into account the principle that the agrarian system of the Republic of Poland must be founded on farm holdings suited for intensive production, retaining as basis the principle of private property".

In the law of 28 December 1925 it is provided that in the course of 10 years from the date on which the law comes into force, 200,000 hectares per year will be parcelled.

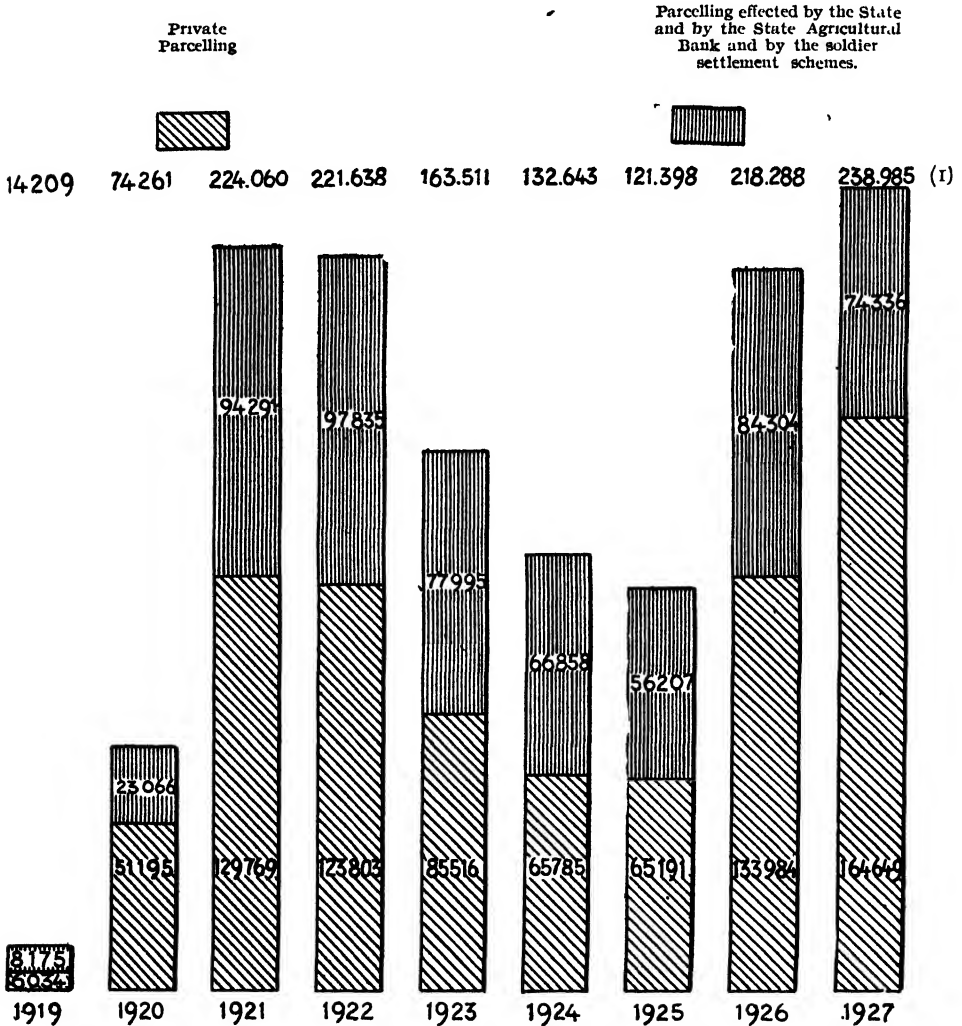
The so-called land reserve, formed by the surplus of the private estates, in the sense of the law, included in 1921 nearly 2.2 millions of hectares. Later calculations, founded on figures supplied by the Ministry of Agrarian Reforms show that this area must have been larger, since in 1925 it amounted to nearly 2 million hectares. In these calculations there have not been taken into consideration the lands used as compensation for servitudes abolished, but account is taken of what are called "exclusions" for holdings managed intensively. Hence, if the parcelling is continued at the same rate (221,000 hectares in 1926 and 239,000 hectares in 1927), the parcelling policy might be finished before the 10 years prescribed have passed.

There is no reason to suppose that the servitudes cannot be liquidated in the course of the same period; in fact the area essential to their liquidation was reckon-

ed in 1921 at nearly 300,000 hectares and in the course of the single year 1927 nearly 83,000 hectares were allotted as equivalent for servitudes abolished.

A less favourable view however emerges in regard to the consolidation of lands and the execution of the more urgent land improvements, in particular in con-

GRAPH D. — RESULTS OF THE PARCELLING EFFECTED BY THE STATE AND OF PRIVATE PARCELLING DURING YEARS 1919-1927.



(1) Area parcellled in hectares.

nection with the degree of moisture of cultivated lands. In the course of 1927, the consolidation of 270,000 hectares was finished and a beginning was made for the improvement of an area of 112,000 hectares. It is necessary to proceed to consolidation of nearly 50 per cent. of the holdings of less than 20 hectares, holdings which had a total area of nearly 14 million hectares in 1921. However in so far

as it is a question of improvements, the calculations made show that 60 per cent. of the arable lands, 80 per cent. of grasslands, 10 per cent. of the gardens, 10 per cent. of the forests, and more than 50 per cent. of waste lands ought to be improved, making a total of nearly 18 million hectares.

These problems demand not only a much longer period of time for their solution, but also a certain degree of development of the financial potentialities of the nation. Moreover, new problems will inevitably arise, the conditions of the agricultural economic situation will be changed before the present day problems are definitely settled, and the character and the objects of the agrarian reform will have to be modified.

In these conditions it would be wiser rather to give scope to the continued development of the agrarian reform than to fix the probable limits of the time necessary to its execution.

d) *Moral and Social Results.*

During the epoch immediately following the law, the peasant masses were in a state of ferment due on the one hand to the destruction of the country side in consequence of the war and on the other by the tendencies emanating from Soviet Russia. This state of ferment was especially noticeable in the Eastern territories.

In these conditions, the formation of independent holdings for several hundreds of thousands of persons who were either landless or possessed lands of an insufficient area must be considered as an important factor in the social peace. The abolition of servitudes in 48,000 peasant holdings, effected up to the end of 1927, has exercised a pacifying influence to a very important extent if not as regards numbers at least in other respects.

As regards the consolidation policy, supported by suitable agricultural credits, it should be considered not merely as a factor in the social peace, but also as a policy forming the basis of prosperity and eliminating an enormous number of holdings whereon the existence of enclaves constituted up to now an insuperable obstacle to the development of the improved forms of agricultural production.

CREDIT

The Agricultural Bank of Bulgaria.

The last 50 years of the Turkish rule had a crushing effect on the village life of Bulgaria. While in the towns there was a gradual raising of the level of the workers from the intellectual standpoint, and the protection of their associations and even of the authorities was more fully extended to them, the village remained sunk in ignorance and poverty. The villagers felt their lives and their property to be alike insecure and lost all heart to produce more than the strict necessities for the satisfaction of their more pressing needs.

Deeply in debt to the village usurer, without the essentials of existence, the peasant was leading a life from which all chance of improvement was completely excluded.

The condition of the Bulgarian village had not escaped the attention of the more far-seeing Turks, more particularly of those who had had the opportunity of studying the life of Western countries. One of these Turkish reformers, Midhat Pasha, governor of the Danube Province, took energetic measures with a view to

rescuing the cultivator from this exploitation by usurers which was reducing him to poverty and despair.

The associations of artisans of the Bulgarian towns, who had already organised public banks on the basis of co-operation, made the suggestion that these banks should organise agricultural credit also.

In 1863 Midhat Pasha issued regulations including special provisions for the formation of public utility banks with their headquarters in the first instance in the district centres. The object of these banks was to make loans on short term exclusively to small holders of agricultural land in the respective districts.

The capital of these banks was built up at first of obligatory charges on the proceeds of the sale of cereals ; later, in certain regions the cultivation in common of communal lands was taken up, and the returns were appropriated to provide the necessary capital.

As the working of these banks in the Danube province gave excellent results from the time of their establishment in 1864, the Turkish Government shortly after promulgated a special law on the organisation and working of the banks.

Thus it was that the first public agricultural credit institutions were founded in the country. Their organisation was on the basis of co-operation and joint and several liability, and hence closely resembled that of the co-operative societies. As there are no Turkish statistics available for that period, it is impossible to form an exact idea of their resources, their operations and their development. It may however be stated that they were banks of public utility, each one functioning separately, without any connection or general system, and controlled only by the administrative authorities. Hence they formed the basis on which was later established the Agricultural Bank of Bulgaria, the only agricultural credit establishment existing at the present time in the country.

The war of liberation completely disorganised the banks of public utility, and their working was suspended up to the end of 1878, all cash, documents and bills of exchange having been removed by the Turkish authorities at the time of the retreat of their army. The Russian occupation authorities enacted, on 20 June 1878, special regulations relating to the organisation of new agricultural banks.

These latter, like the former public utility banks, made loans in cash and advances exclusively to holders of agricultural property, on personal guarantee, or pledge of bonds or on mortgages.

The law relating to the organisation of agricultural banks dates from 23 December 1894, and in accordance with it the management of these banks was placed in the charge of a special department of the Ministry of Agriculture. This law did much for the development of operations as well as for adaptation of all organisation to the special object of these banks, which up to that time were separately worked and had no scheme in common of their activity. Afterwards, the agricultural banks combined into a single institution which directed their credit operations. Although each bank possessed its own capital, credits were already given according to the requirements of each. At that time also the departments for deposits on short term and for orphans' deposits were organised.

A system of double entry book-keeping was also introduced and steps were taken to engage a competent staff.

In 1896 the agricultural banks contracted with the Bank of Paris and the Netherlands a loan in bonds for 30 million gold levas at 5 per cent., of which five sixths only have been issued. This loan enabled them to widen the sphere of their operations.

With this organisation the agricultural banks entered on a campaign against

usury and advances on crops which were at that time practiced on a large scale. The results of this campaign were very soon felt and the disastrous effects of these usurious loans on rural property to a great measure counteracted, the banks in this way rendering an inestimable service to the Bulgarian village.

The following is a statement of the capital, owned and borrowed, and of the loans made by the agricultural banks during the period 1895 to 1903, in levas :

Years	Owned capital	Borrowed capital	Loans		
			on personal surety	on mortgages	on bonds
1895	22,600,000	18,700,000	40,000,000	31,000,000	55,000
1897	28,800,000	36,600,000	51,600,000	10,300,000	852,000
1899	32,400,000	47,500,000	60,700,000	11,200,000	720,000
1901	36,200,000	62,400,000	68,700,000	11,200,000	1,700,000
1903	40,200,000	70,000,000	56,600,000	11,000,000	1,100,000

By a law of 1903 which came into force on 1 January 1904, the Agricultural Banks were reorganised in accordance with the principles of modern credit institutions, so that all the existing banks were amalgamated into a single institution, the Agricultural Bank of Bulgaria, the capital of which was set aside exclusively for raising the standard of and for introducing more scientific methods into rural property.

The general management of the new establishment was entrusted to an administrative council with a governor or general director as chairman assisted by four managers. The branches of the Bank are managed in the same way by councils consisting of the Director of the Branch, the head accountant and the cashier.

In the special law previously referred to, provision is made for a series of special privileges in connection with the procedure for recovering by way of forced sale in the case of insolvent borrowers, as well as in connection with the non-alienation of the pledges of such borrowers. The courts deliver distraint orders in the name of the Bank, on the strength of copies duly attested by the Bank of the documents establishing the liabilities. With a view to guaranteeing the Bank credits the law makes provision for another very important privilege, which is that any alienation before a notary may take place only if the persons concerned are provided with a document of the Agricultural Bank certifying that they have discharged all debts to the Bank. The law of 1903 also enacted that purchase and sale operations in respect of real property, whether such operations be public or under private seal, are considered as null and void for the respective branch of the Agricultural Bank of Bulgaria if they have been effected without the consent of the Bank.

New departments have been opened, among the most important of which is that of loans on the pledge of live stock, of standing crops, of farm products and requisites. This class of loans, owing to the security of the credit of the Bank, and to the liquidity and ease with which the loans can be obtained, has proved more capable of development and expansion than any other class.

In this case the credit is of a special "pledge" type, the live stock, farm products or machines pledged being left in the hands of the borrower who however has no power to alienate, pledge or sell them before repayment in full of the sum due to the Bank in capital, interest and costs.

The operations of the Agricultural Bank, authorised by the law of 1903, are as follows :

1. It receives deposits on term or at sight, deposits made by order of the court and trustee deposits (orphans, minors) ;
2. arranges loans on mortgages, on pledge of live stock, standing crops, farm products and material, on personal surety (bills payable to order), on pledge of bonds issued or guaranteed by the State, as well as on certificates of deposits delivered by the Bank itself ;
3. makes advances to agriculturists for purchase of live stock, seeds, and agricultural requisites ;
4. opens current accounts for agricultural co-operative societies with limited or unlimited liability ;
5. makes advances to the State, as well as to departments and to communes for the improvement of agriculture and its branches ;
6. takes part in the issue of State loans ;
7. purchases on the order and on the account of farmers agricultural requisites, live stock and seeds ;
8. buys and sells bonds for its own requirements or on customers' account ;
9. receives for safe keeping valuable documents or objects of value.

The law in question has been amended and completed several times since its coming into force. The authentic text is that of the 1927 official edition of the Bank, including all the supplements and amendments up to 18 April 1927.

From 1904 onwards the Bank has embarked upon a course of economic and financial activity. From that time it has been in a position to meet the credit requirements of the rural population and to render it independent of the capital offered by the moneylender. Also a special supply department is organised by the Bank with the object of procuring for the rural population commodities at low prices and of good quality.

In 1910 the Bank arranged for the construction of the first cocoon-drying factory at Harmanly and the number of these installations has steadily increased from that time onwards.

During the period 1904 to 1923, the capital, owned and borrowed, and the investments of the Agricultural Bank have been as follows, in levas:

Years	Owned capital	Borrowed capital	Loans			
			on bills payable to order	on pledges	on mortgages	miscellaneous
1904	42,418,981	75,154,390	48,645,047	2,340,470	11,006,275	884,232
1906	46,210,360	72,890,035	46,487,067	25,811,482	18,357,846	818,381
1908	50,803,821	80,434,653	46,824,742	11,690,055	21,244,780	6,876,269
1910	55,601,888	90,776,875	44,844,407	18,637,370	39,619,075	6,604,303
1912	59,062,203	100,885,821	45,947,815	20,595,332	52,335,087	5,724,364
1914	65,680,947	130,053,138	62,514,910	25,907,427	62,598,283	9,125,348
1916	69,949,237	146,085,661	63,911,817	10,844,044	60,015,408	12,342,017
1918	75,230,297	233,983,125	39,807,150	19,094,878	41,256,786	162,451,450
1920	98,728,829	399,506,820	115,618,228	246,329,048	93,519,100	11,360,733
1922	317,069,492	915,156,732	204,121,103	372,700,511	172,415,339	90,695,054
1923	306,414,020	1,305,100,771	327,461,076	423,890,082	166,942,552	172,547,577

Towards 1924, the co-operative movement in urban and rural circles in the West had made great progress and was already assuming important dimensions. The General Management of the Agricultural Bank was fully aware of the value and the important future of the co-operative associations, and issued instructions to its branches to proceed to the organisation of agricultural co-operative societies in all the villages where the necessary conditions could be complied with. Although much

difficulty was encountered in the organisation of societies of this kind, especially owing to the want of sufficient technical and managing staff, every effort was made by the management and by the officials of the Bank for the extension of the co-operative movement in the villages in particular, as it was believed that by so doing a great service would be rendered to the rural population. The results obtained subsequently have proved on several occasions that the Agricultural Bank had rightly gauged its own part in respect to the co-operative movement in the country districts.

In 1907 the special law was passed on the co-operative associations which gave marked encouragement to the development of the co-operative movement in Bulgaria.

On 31 December 1910 the following loans had been made by the Agricultural Bank.

576 agricultural co-operative credit societies . . .	11,735,000 Lv.
3 co-operative dairies	19,000 Lv.
3 agricultural syndicates	45,000 Lv.
1 co-operative wine making society at Souhindol	25,000 Lv.
2 popular banks	27,000 Lv.
585 co-operative associations	11,851,400 Lv.

In 1910 the Central Co-operative Bank was established the object of which was to finance and direct all the co-operative societies of Bulgaria. However, as this Bank had neither sufficient funds nor a suitable organisation it proved impossible for it to fulfil such a rôle in respect of the development of the co-operative movement, more especially in respect of the agricultural co-operative societies. By an amendment of the law on the Agricultural Bank, made in 1921, the agricultural co-operative societies were again brought within the province of this bank, the Central Co-operative Bank remaining in charge from that date merely of the financing of the urban co-operative societies.

The Central Co-operative Bank thus handed over to the Agricultural Bank a situation consisting of 744 co-operative societies which had received and utilised credits to a total sum of 22,874,376 levas.

Under the regime of the Agricultural Bank of Bulgaria, the agricultural co-operative societies developed rapidly and successfully, and the Bank decided to use these societies as intermediaries in making loans proportioned to development in each case, to the small rural holdings that had up to that time been receiving directly from its branches the credits they required.

With their knowledge of the special conditions of agricultural credit as well as their acquaintance with their clients' solvency or otherwise, the co-operative societies were thoroughly well organised for the distribution of loans the object of which was to aid and encourage the small rural holdings. The funds of the Agricultural Bank invested under the form of loans to the co-operative societies are completely secured by the fact of the unlimited liability of the members. In addition the loans made by the co-operative credit societies are regarded by the Bank as loans made directly by itself, the societies being under its continuous control and the Bank being in a position to recover its credits at any moment.

For the period from 1924 to 1929, the owned capital of the Agricultural Bank, its borrowed capital and its investments, with the exception of those of the agricultural co-operative societies to which it grants credits, may be stated as follows, in levas:

Years	Owned capital	Borrowed capital	Loans			
			on bills payable to order	on pledges	on mortgages	miscellaneous
1924	391,996,168	1,682,487,326	440,461,426	507,747,558	148,663,607	211,758,114
1925	415,100,224	1,853,641,294	448,085,703	547,021,283	138,981,853	236,828,075
1926	426,529,829	2,178,839,208	498,055,106	715,365,150	151,730,563	282,105,228
1927	461,571,929	2,522,577,064	511,440,527	878,506,774	187,061,164	326,858,845
1928	522,318,628	3,756,864,179	617,343,463	1,095,935,745	209,046,573	702,147,530
1929	617,141,407	4,356,141,661	805,124,155	1,676,443,973	374,085,751	784,448,375

The depreciation of the leva after the war has had very unfavourable effects on the financial capacity of the Bank, its debtors having paid off their obligations in depreciated currency. The losses of the Bank have however been in part counter-balanced by repayments, made by itself also in depreciated currency, of the deposits placed in its charge by third parties.

It is true that the Bulgarian cultivator has temporarily benefited by this liquidation of his debts as well as by the raised prices of nearly all agricultural products. It is probable that if at that period the Bank had done what was necessary for the increase of the owned capital of the agricultural co-operative societies which had received loans from it, these societies would by this time have become very powerful organisations.

Taking as basis the depreciation of the leva in relation to the Swiss franc, the following table gives full confirmation of what has been said:

Year	Capital and funds	Deposits	Loans				
			on special guarantee	on pledges	on mortgages	miscellaneous	to co-operative societies
1904	42,418,081	75,154,300	48,645,047	2,340,470	11,062,275	884,232	—
1908	50,803,820	80,434,653	46,824,742	11,680,055	21,244,789	6,876,260	5,772,592
1914	65,684,947	130,058,138	62,514,910	25,997,427	62,508,283	9,125,348	686,881
1920	3,654,622	14,800,000	4,282,231	9,123,208	3,474,554	420,805	2,720,191
1924	14,517,047	62,314,346	16,313,380	18,805,465	5,508,080	7,842,834	22,177,066
1927	17,095,256	93,428,780	18,942,242	32,537,232	6,925,191	12,180,000	31,913,190
1929	22,857,089	161,338,580	29,819,413	12,090,518	13,855,028	27,201,808	47,396,288

At the present time the Agricultural Bank is making great strides as a large and powerful credit institution. Its activity is of capital importance for the raising of the standard of the agricultural holdings. It has become a most valuable aid to the Ministry of Agriculture as regards the application of the agrarian policy of the Ministry. Through the agency of the Agricultural Bank, considerable stocks of agricultural material, seeds, etc. have been distributed in a very short time, such distributions having done much for the intensification and improvement of the means of existence of the Bulgarian cultivator.

The Bank has thus come to the assistance of the cultivator in all cases of poor harvests which have followed on floods, drought, hail, etc. He has very often been saved from dire need by money loans, advances in kind, seeds, foodstuffs, stock

eds, etc. In the course of 1929, the Agricultural Bank received 336,000,000 levas on the Stabilisation Loan made by the State, a sum which enabled it to open new credits with co-operative societies and with farmers. Beginning from 1925 one of the chief matters demanding the attention of the Bank was the increase of the owned capital of the agricultural co-operative societies by securing new shares in cash or kind. On 31 December 1929, the agricultural co-operative societies accepting loans from the Bank, owned, in the form of members' capital, subscriptions and funds, resources amounting to 625,575,000 levas, which proves quite clearly that the policy of the Bank in this respect has given excellent results.

The Agricultural Bank has also come to the aid of many special co-operative societies : tobacco-planters' societies, vine growers' societies, silkgrowing societies, etc. It will be understood that this assistance has been granted exclusively to those societies of this kind which have shown proof of vitality and of financial strength.

On 31 December 1929, the Agricultural Bank had granted to the co-operative societies loans as follows, in levas :

Number and class of society	Credits on special guarantee	Credits on pledges	Credits on mortgages	Totals	Members	
					individuals	societies
1339 co-operative credit societies . .	553,605,070	76,236,482	2,049,778	631,891,326	141,946	5
38 consumers' societies	2,801,635	327,068	5,973,823	9,102,525	2,510	—
55 societies for production	25,348,900	11,613,068	3,011,814	39,973,782	10,145	31
32 tobacco planters' societies	114,445,734	205,672,940	31,257,890	351,381,566	20,300	—
22 syndicates	48,526,730	27,097,545	4,300,089	79,924,373	11,303	318
27 co-operative unions	39,655,166	21,423,740	1,459,212	62,538,127	1,146	408
4 miscellaneous societies	117,584,068	434,365	—	118,019,333	23,345	2
1490	901,973,213	342,805,218	48,052,601	1,292,831,032	210,695	824

At the present day, the Agricultural Bank of Bulgaria is a well organised modern credit institution, possessing in capital and reserves the considerable sum of 617,000,000 leva. By means of its 98 branches and 60 agencies it covers all the Bulgarian country side the standard of which it is doing much to raise. It stands very high in authority and prestige in rural circles. The farmer values this public credit institution for the part it plays in forwarding the welfare and prosperity of the Bulgarian village as it is thanks to the action of the Bank that agricultural products fetch their proper price on the market.

IVAN MIHAÏLOFF,

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of Bulgaria.*

MARKETING OF AGRICULTURAL PRODUCE

Fruit Growing in Switzerland and the New Alcohol Regulations.

Switzerland possesses some 12,500,000 fruit trees. The total gross return of Swiss fruit tree cultivation amounted in 1928 to more than 100,000,000 francs, while that of cereal crops was 59,000,000. These figures require no comment : fruit growing is one of the most important branches of Swiss agriculture, although up to the present it has not enjoyed very favourable conditions.

The legislation passed in 1885 was a compromise. The Alcohol Administration (*Regie de l'alcohol*) undertook to purchase on the home market one fourth of the alcohol requirements of the country, at a price such that a profit would be ensured to the producer with amortisation of his still over ten years. The option of distilling home grown fruits and their residues was left to the peasant. The production of cider-making fruits developed rapidly and there was an increase of residues. Protected by the monopoly however, the growers for some time continued to make 200 to 250 francs per hectolitre of absolute alcohol by sale of their brandies made from fruit residues. Prices subsequently dropped, especially in years of abundant harvests when there was an unsold surplus, and the *Regie fédérale* lost its customers.

The Board was thus compelled to lower prices in its turn, while beer and wine became dearer, brandy becoming the cheapest form of liquor. According to the official statistics, seven litres and a half of alcohol per head are consumed annually in Switzerland, and there are more than 20,000 victims of alcohol who have to be supported out of public funds at a cost of 100 million francs per annum.

On the other hand, the sale conditions of the fruit were far from satisfactory. Switzerland imported every year 6000 truck loads of foreign fruits for a sum of 40 million francs, and 51 per cent. of the home production had to find its way, for want of a market, to the cider press or the distillery. Only a revision of the constitution of the Alcohol Administration could remedy this state of affairs.

The first Bill for this revision was prepared by the Federal Chambers in 1923, but was not passed, since the majority of the Swiss peasants were anxious not to lose their stills and consequently voted against the measure. There are 35,000 home distilling plants in Switzerland.

The new Bill, passed on 6 April 1930 by the nation, authorises home distillation. At the end of 15 years, every owner of a still must apply to the State for a concession which will be granted to him free. He may distil only his own products or those gathered wild in the country.

He will have the right to keep, without payment of the duty, all the brandy which he may consider necessary for his household and his farm.

The Government will take delivery of all alcohol intended for sale. The same article which makes it obligatory for the Government to take delivery of all brandy offered, also makes it obligatory for the peasant to deliver to the Alcohol Administration all his saleable brandy. He will obtain five francs at least per 100 kilogrammes of cider fruits. From the sale of his fruit brandy he will draw 2.2 centimes per volumetric percentage or 1 franc 55 per litre of brandy at 70 per cent. (volumetric) of alcohol. The guarantee of this minimum price makes it possible for the peasant to face the future with confidence and also enables a normal working of the cider presses, without risk of losses.

As it is not desired to supplant by an undistinguished State "kirsch" the cherry and plum liqueurs, the distilling products of wine, wine lees, grape residues, gentian roots and juniper berries, the Administration does not force the distillers to consign these fine liqueurs. They will however be subjected to the same duty as the ordinary brandies.

The new article of the constitution proposes in addition to suppress the distillation of potatoes. The distilleries will only function in years of heavy crops. The difference between the price of foreign brandy and the cost of production of potato brandy is such that the Federal Alcohol Administration, merely by abstaining from the distillation of these 30,000 hl. of potato brandy which were promised as supply to cover the quarter of the alcohol requirements of the country, makes a

profit of 2 millions of francs, after deduction for the subsidies granted with a view to lowering the costs of transport of potatoes from the producing regions to the centres of consumption. On the other hand the new article gives the peasant farmer the assurance that the selling price of his potatoes will not fall 8 to 12 francs per 100 kilogrammes.

The Federal Government will encourage the consumption of sweet cider and of table fruits. One hundred kilogrammes of fruit yield 5 litres of absolute alcohol. The Federal Alcohol Administration will pay 11 francs the litre for this alcohol and will sell it again at 20 francs the litre, realising a profit of 9 francs. If the Administration obtained its supplies from abroad, it would realise a double profit: foreign alcohol costs two francs the litre. On the transformation of home produced alcohol into alcohol for burning, the Administration makes no profit but incurs loss instead.

It is accordingly in the interest of the Administration to reduce as much as possible the production of alcohol. Courses will be organised on the most scientific methods of obtaining the full value of fruits apart from distillation. The Administration will also reduce transport costs, and will grant subsidies towards construction of cider presses, drying fruit installations, refrigerating depots, etc.

One of the most important objects contemplated in the new law is the checking of the abusive use of brandy, without interfering with its moderate consumption uses. For this purpose, the Federal Government will raise the price of brandy which is not to be transformed into burning alcohol, with a view to attacking the confirmed drinker of schnapps. The State will collect a tax of one franc per litre of brandy, and the selling price in the cafes will be increased by 1.50 francs per litre or by 5 centimes per small glass. The receipts realised as the result of the new alcohol regulations will largely go to swell the old age and life insurance funds. An annual profit of 7 millions has been up to now realised in Switzerland on the trade in brandy. In future these receipts will amount to 23 millions. The Federal Government and the cantons will each take their share. The share of the Federal Government will be all earmarked for the old age and survivors' insurance funds; a part of their share will also be devoted by the cantons to the same purpose. A man or woman of more than 65 years will receive, during the first 15 years of the application of the law, from 200 to 250 francs, and 500 francs later. Although not so effective in the town, in the country where the parties concerned have a house and a plot of land which supplies them with vegetables and potatoes this income of 1000 francs will go far to assure the maintenance of an aged couple.

I. D.

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FARM ECONOMICS

Utilisation of the Cereal Crop in Germany.

In an earlier article a short account was given of the work done in Germany of elaboration of farm accountancy results with the object of establishing statistics relating to farming conditions. It was noted that these statistics are centralised for the whole of Germany in the *Betriebstelle des deutschen Landwirtschaftsrat*, and are also established separately in each of the Farm Accountancy Offices for the district with which each office is concerned (1). In recent years the *Deutscher Landwirtschaftsrat* has given increased attention to the preparation of statistics on the circulation of agricultural products. One result of these studies appears as an enquiry into the destination of the German cereal crop (2).

Two questions were taken for examination: 1. the distribution of German cereal production among the various methods of utilisation; 2. the distribution of cereal sales among the different months.

In the first part of the enquiry a study is made of the utilisation of the cereal crop during the four farming years 1924-25 to 1927-28 on the farm holdings under review by the Farm Accountancy Offices. In all 10,731 farm accounts were examined. The turnover of holdings under five hectares was not taken into consideration, as accounts are scarcely at all kept on holdings of this size and hence no material is available.

In the enquiry were included: the production of cereals, movement of stocks, additional purchase and sale of cereals, consumption for sowing, allowances in kind and contribution in kind to the farm household, as well as the distribution over the months of the cereal sales. Classification under the different headings as a rule followed the economic regions and the size groups of holdings. Next to crop result, price formation and general agricultural development, the factors of greatest importance in regard to cereal circulation are those of size group and economic region. In the enquiry the different kinds of cereals are in the first instance treated separately, otherwise rye and wheat are grouped together as breadstuffs, and barley with oats and meslin as feed grains. The item, supplementary purchase of grain, mainly relates to purchases of seeds for sowing, in a less degree purchased grain is used for allowances in kind and for fodder. Purchases posted in the accounts under feeds, such as feed barley, are not included in the cereal turnover.

In the second part of the enquiry the values obtained by means of the farm accountancy are applied to the cereal turnover of the whole of German agriculture. A comparison made between the crop results obtained by means of the accountancy data and those of the crop statistics confirms what had already been established from another side, that the official crop estimates of the last few years have been too low by from 10 to 15 per cent. It is impossible here to examine

(1) Accountancy Results in German Agriculture during the financial Years from 1924-25 to 1927-28 as forming a basis for Farming Statistics. *International Review of Agriculture*, Part II, November 1929.

(2) FENSCH, Dr. H. I., HERHOLZ, Dr. R. Die Verwendung der deutschen Getreideernte. Part 18 of the Publications of the *Deutscher Landwirtschaftsrat*, Berlin, 1930.

the methods of the general application of the accountancy results to German agriculture as a whole. The possibility of doing so is accepted on the basis of former experiments of the kind. It appears that such generalisation in recent years has led to the establishment of results that have coincided in a marked degree with the results of other researches.

It would be of great interest to follow the fluctuations and other changes which for various reasons have occurred in the utilisation of the cereal crop during the past few years; but a few summarised data are all that can be reproduced here. In the following table the utilisation of cereals is shown for all Germany in a percentage of the production (apart from seed kept for sowing) for the average of the years 1924-28. The movement of stocks and supplementary purchase of grain have been omitted in establishing the sales.

TABLE I. — *Utilisation of Cereals in percentage of the production.*

Kinds of cereals	Production less seeds for sowing	Percentage			
		net sale	wages in kind	household use	feed grain
Rye	100	40.4	9.0	28.2	22.4
Wheat	100	66.1	2.7	21.0	10.2
Barley	100	42.1	4.4	4.4	49.1
Oats	100	10.3	0.7	1.1	87.9
Rye, Wheat	100	48.4	7.0	26.0	18.6
Barley, Oats	100	19.9	1.8	2.1	76.2
Total	100	85.0	4.5	14.6	45.9

The quantity of material available has made it possible to estimate the distribution of the production of cereals over the different size groups, and the share of each of the size classes in the cereal sales in the four years 1924-25 to 1927-28. The results of these estimates are shown in the two following tables:

TABLE II. — *The distribution of the German cereal production among the different size groups. Average of 1924-28.*

Kind of cereal	Cereal production on holdings of over 5 hectares of agric. land in 1928 tons	Percentages on the size groups				
		5-20	20-50	50-100	100-200	over 200
Rye	6,455	42	24	8	6	20
Wheat	8,010	42	24	9	7	18
Barley	2,560	37	23	9	8	23
Oats	6,185	42	23	9	6	20
Meslin	1,250	28	23	11	8	30
Breadstuff cereals	9,465	42	24	9	6	19
Feed grains	9,995	39	23	9	7	22
Total cereals	19,460	40	23	9	7	21

The investigation of the distribution over the months of cereal sales only extends to the two years 1926-27 and 1927-28, as for the preceding years the necessary data were not collected. In consequence any deductions from the results should only be made with considerable reserve. The distribution was calculated for the

TABLE III. — *Distribution of Sale of Cereals in Germany among the different size groups. Average 1924-28.*

Kind of cereals	Cereal sales on farms of over 5 hectares of agric. and in 1000 tons	Percentages of sales on the size groups				
		5-20	20-50	50-100	100-200	over 200
Rye	2,955	32	26	10	8	24
Wheat	2,110	34	25	11	8	22
Barley	1,200	32	22	9	10	27
Oats	900	27	15	9	9	40
Meslin	200	22	15	13	10	40
Breadstuff cereals	5,065	33	25	11	8	23
Feed grains	2,410	29	19	9	10	33
Total cereals	7,475	32	23	10	8	27

twelvemonths July to June. More or less striking divergences in the monthly sales figures can be observed for the different kinds of cereals. The divergences are much less great in the figures for the total cereals sales, as will be seen from the following table :

TABLE IV. — *Monthly distribution of the cereal sales in percentages of the total sale. Average 1926-28.*

	July	Aug.	Sept	Oct.	Nov.	Dec	Jan.	Feb.	March	Apr.	May	June
Total cereals incl. meslin . . .	3,5	8,0	12,0	10,0	12,0	12,5	10,5	8,5	8,5	6,0	4,5	4,0

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INTERNATIONAL REVIEW OF AGRICULTURE

PART II

MONTHLY BULLETIN

OF

AGRICULTURAL ECONOMICS AND SOCIOLOGY

CREDIT

The Co-operative Rural Bank Movement in Finland.

In origin and development there exists a great similarity between the general co-operative movement in Finland and the Finnish co-operative rural bank movement: both have grown from the centre outwards on a preconceived plan.

In 1899, before co-operation had any practical existence in Finland, the Pellervo society was formed with a view to the promotion of co-operative ideas and to the establishment of a connecting link between the co-operative enterprises.

It was this society that brought about the establishment of co-operative undertakings and that for a long time directed the whole course of the movement.

Similarly in 1902 before there was a single co-operative rural bank in existence a number of private individuals formed the Central Bank of the Co-operative Rural Banks (*Osuuskassojen Keskuslainarahasto*) with the object of supplying the local co-operative rural banks which were to be established with the necessary working capital. The capital necessary for the start of the Central Bank was provided by a State loan of 4 million Finnish marks on favourable terms as well as an annual subsidy of 20,000 marks for ten years. (1). It was realised by the leaders of the newly started Finnish co-operative movement that until such a central institution was set up and supplied with the necessary funds it was useless to initiate propaganda for the foundation of local banks among the very poor Finnish farmers whose deposits would scarcely suffice to furnish their banks with the necessary working capital. The legislation of the time was influenced by the interests of joint stock and savings banks, and did not allow co-operative credit societies to accept deposits from other than members. Once the economic foundation was secured however the Pellervo Society, as the central organisation of Finnish co-operation assisted by the best possible experts, began in earnest to draw up standard rules suitable for Finnish conditions, book-keeping forms, manuals on the foundation and management of rural banks as well as on the accountancy methods to be adopted. When this preparatory work was finished a no less intensive information propaganda was initiated in the press, which from the first was favourably disposed to the new movement, a propaganda which was also carried on by means of lectures and farmers' meetings on a large scale.

(1) Pre-war parity 5.18 Finnish Marks = 1 dollar; present parity 30.70 Marks = 1 dollar.

I. Development of the Co-operative Rural Banks.

The result of this work was that in 1904, one year after the foundation of the first local bank, 69 such banks were already in existence. Later, in 1912, when the movement was celebrating its 10 years' jubilee, there were not less than 400 banks, with a membership of 20,000 and a working capital of about 50 million Finnish marks.

The following years, up to 1920, were a period of relative retrogression as the result of the compulsory liquidation of a considerable number of local banks which had not been properly administered, of the withdrawal of the credit of the Cental Bank and of the fact that the movement had incurred the distrust of the Russian authorities of those days.

An additional cause was, too, the abundance of money, which immediately after the world war in connection with the inflation flowed into the hands of the farmers. In spite of these hindrances the growth of the movement continued though slowly, also during this period. Each year on an average 20 new local rural banks were founded with the result that in 1918 there were in existence 606 with 29,000 members and a working capital of about 130 million Finnish marks.

The time from 1920 has been a period of extremely lively development, the number of local banks annually founded having been 120 or six times as many as in the period 1912-1920. At the end of 1928 there existed thus in Finland 1,416 co-operative rural banks with about 135,000 members and a working capital amounting to over 1000 million marks. Out of a total number of 533 rural communes at the end of 1928 only 56 did not possess a co-operative rural bank.

About one-third of the farmers in Finland are members of rural banks. The overwhelming majority of the members consists of small holders: 81 % (in 1928) owning 10 hectares or less of cultivated area; 18 % 10-50 hectares, and only about 1 % larger farms.

In addition to the individual members, the membership includes also a considerable number of other agricultural co-operative societies, rural communes and other associations. As regards size of membership the banks vary greatly; from a few dozen to several hundred. The average amounts to about 90 per bank.

The reasons for the very remarkable achievements of the co-operative rural banks movement in Finland in the years after 1920 are manifold. The Land Reform Law of 1918 had made it possible for the small farmers working on leased land to become independent owners on very favourable terms and during the last ten years there were in this way created more than 100,000 new freeholders.

Naturally so long as all these farmers had their holdings on lease only, they had not been inclined to borrow money and sink capital in farms of which they were not real owners. On the other hand it is evident that from the point of view of the rural banks, lease-holders could not offer enough security for loans. With the land reform the conditions changed and new rural banks sprang up in commune after commune giving the new independent farmers the opportunity of obtaining the necessary credit for the redemption and the amelioration of the farms.

The rationalization of agriculture — not least in the hope of electrification — the building of new co-operative dairies, the transition in the war and post-war years for great parts of the country from natural to money economy, are also factors which have called for new capital promoting the formation of new rural banks and increasing their membership. It is in this connection especially interesting to note that as a result of developments of this order a great number of the

larger farmers have joined the banks, in which they were before very little represented.

The increased demand for credit could be met, thanks partly to the large loans on favourable terms given by the State to the Central Bank and partly to the right to accept deposits also from non-members, a right granted by a bill passed in 1920 both to the Central Bank and to local rural banks after necessary alterations made in their regulations.

Another important factor promoting the rural bank movement has been the high discount rate charged, owing to the scarcity of capital, both by the private and the savings banks (10-12 % or even more), which of course has increased the number of customers of the rural banks offering much cheaper credit.

As an additional stimulus to the co-operative credit movement in Finland in later years may be finally mentioned the granting since 1925 of long term credit in the form of mortgage loans, for which purpose the Government assigned a sum of 103 million marks to the Central Bank to be lent through the local co-operative rural banks to their members.

II. Constitution and Administration of the Co-operative Rural Banks.

The Finnish Co-operative Rural Banks, which according to their charter have to supply their members with credit on most favourable terms possible as well as with opportunity for safe deposit and accumulation of their savings, are organized in accordance with the well-known principles laid down for co-operative banks by Raiffeisen. The Finnish co-operative rural banks have only so far differed in their activity from the principles of Raiffeisen that they have asked for and received State aid and that the entrance fees were fixed comparatively high. These fees were originally 60-100 marks, no small sum in pre-war money for the poor population among which the banks were founded; later, with the depreciation of the currency 100-300 and 300-600. Although these sums appear small they represent an amount not always easily found by many of the farmers entering the rural banks as members, taking into consideration that the average income of the members in 1928 only amounted to 9000 Finnish marks. The smallness of the membership fees does in no way endanger the solvency of the banks, which is chiefly based on the unlimited liability of all members for the obligations entered upon by their bank. The total value of the property owned by members, of which annual statistics are collected, amounted at the end of 1928, according to a low estimate, to approximately 8000 million Finnish marks, a sum many times higher than the indebtedness of the banks.

The administration of the co-operative rural banks is carried out by a Board of Administrators elected at a general meeting, consisting of five ordinary and three deputy members, each member having only one vote. For the current business of the bank the Board appoints an accountant who receives a fixed annual salary. As however most of these officials are able to perform their duties as spare-time work, the remuneration as a rule is kept very modest. For an accountant in the smaller banks who attends to the business only once a week, the remuneration usually does not amount to more than 500-1000 marks annually, including rent for the office. In banks requiring longer office hours, the salary may rise to higher amounts, giving the accountant a supplementary income of 4000-8000 marks. In the relatively few rural co-operative banks which wholly absorb the time of the accountant he of course receives an adequate salary. The smallness of the remuneration

of the accountant, the honorarium, also very modest if any, paid by the banks to the members of the Board, and the fact that the offices are mostly situated in the home of the chairman or accountant or in schools or parish buildings, makes it comprehensible how it is that, as regards administration expenses, no other Finnish financial institutions are run so cheaply as the agricultural credit banks. It is also remarkable that, with the growth of the business in recent years, the administration expenditure has not risen in the same proportion. On the contrary it has year by year become relatively smaller. In 1925 it amounted thus to 0.74 % of the balance sheet totals, in 1926 to 0.72 % and in 1927 to 0.65 %.

The Board of Administrators meet in the case of most of the banks once a month. The office hours are regulated according to local conditions and the importance of the banking operations: relatively few are open every day, most of them only once a month (in these small banks, however, the accountant accepts deposits at any time), twice a month or once a week. The number of banks, having their office open every day, has however rapidly increased in recent times.

Usually the staff of the Finnish rural banks consists only of the accountant, who at the same time is also manager, cashier, correspondent and statistician.

Only exceptionally is any real part taken in office work by the chairman of the Board. At the beginning of the movement, attempts were made, following the example of Raiffeisen himself, to secure the help of the parish clergy for the direction of the rural banks in Finland. This has been largely accomplished in Roman Catholic countries, such as France, Italy and Ireland, but in Finland the plan did not meet with much success. At present the majority, or about two-thirds, of the accountants are farmers or farmers' sons, and about one-fourth are teachers.

III. *The Business Activity of the Co-operative Rural Banks.*

As already mentioned, the working capital of the co-operative rural banks is chiefly obtained from loans granted by the Central bank, from deposits, membership fees and reserve funds. At the end of 1928 the working capital of the rural-co-operative banks amounted to over 1000 million Finnish marks of which 23.5 million is owned capital (share capital 9.6, reserve and available funds 13.9), 274.3 deposits and 726.9 loans from the Central Bank and, to a trifling extent however only, from other banks.

The greater part or over 70 % of the working capital comes thus from the advances of the Central Bank. The owned capital is relatively small and is increasing slowly owing to the smallness of the membership fees and to the fact that the annual surplus the only source for augmentation of the reserve funds, is trifling, the margin of profit being kept very low. In 1927 the average margin between the interest paid by the banks on their own borrowing and the rate charged to members amounted only to 1 ½ %, i. e., less than in any other Finnish financial institution.

As already stated, the co-operative rural banks were up to 1920 by law forbidden to accept deposits from non-members, a fact that explains that in earlier years of the movement little importance was attached to the collection of deposits, the majority of the members being very poorly off. Especially after 1925, however, there has been a very rapid increase of the deposits, making it possible for the societies appreciably to meet the needs of the members from capital accumulated in this way. From 1927 to 1928 deposits increased by 118 million marks or 75 %. Compared with other financial institutions, the rural banks have only a very small portion, not even 3 %, of the total deposits in the country.

The capital of the co-operative rural banks is chiefly used for loans, which are given to members only. Other investments are restricted entirely to the purchase of shares in the Central Bank, in proportion to credit enjoyed, and to bank deposits. According to the law, 10 % of the deposits entrusted to a co-operative bank must be invested in bank deposits or safe easily negotiable bonds.

According to the Raiffeisen principles loans are only granted for productive purposes, specified in advance, *i. e.* for purposes likely to improve the economic status of the borrower. In case of larger loans a working plan drawn up by an expert is always requested. The rate and time of redemption are fixed separately in each individual case, and allowance is made for the purposes for which the loan is required. Inspectors appointed by the bank administration see that the objects, for which the loans have been granted, are actually carried out in conformity with the plan drawn up. Only farmers in well established economic positions, co-operative societies and associations, are granted current cash credits for business purposes less strictly defined. Owing to the fact that the number of communes, agricultural co-operative societies and other associations in recent years have become members of the rural banks, cash credit, *i. e.*, advances on current account, has increased appreciably. As seen from the table below there has been a steady increase in the credits granted to the members. In 1928 they amounted in all to 799 million marks, of which 446 millions were given against bonds and 353 millions in the form of advances on current account.

The Co-operative Rural Banks during the years 1924-28.

Years	Number of rural co-operative banks	Members (end of the year)	Own'd capital	Loans from the Central Bank	Deposits	Loans to Members		
						against bonds	against promissory notes	Total
			mill. marks	mill. marks	mill. marks	mill. marks	mill. marks	mill. marks
1924	1041	77,925	6.8	200.4	28.1	123.5	28.2	151.7
1925	1233	95,419	9.6	274.0	46.1	155.9	50.9	206.8
1926	1344	108,763	13.3	394.1	82.4	272.9	83.6	356.4
1927	1399	119,814	17.9	586.6	156.5	319.7	190.2	509.9
1928	1416	131,045	23.5	726.9	274.3	445.8	353.8	799.1

The purposes for which loans chiefly have been granted in recent years are land reclamation, soil improvement and purchase of agricultural requisites. About 50 % of the credit granted has been used in this way. Building loans and purchase of live stock are represented by respectively 25 and 10 %. Since 1916, as already mentioned, the banks have also granted long term loans, first only for the purchase of new holdings, later on also for the acquiring of already established farms and additional land. In the years 1925-28 the loans thus granted numbered about 9,000, aggregating 56 million marks, for the purchase of new holdings and additional land, together representing an area of over 90,000 hectares. In 1925 the long-term credit business of the co-operative rural banks was, as already pointed out, greatly stimulated thanks to the State loan of 103 million marks granted to the banks and intended for mortgage loans to their members.

In order to show more in detail for what purposes the loans granted are used and the results achieved, the following table is given. The figures refer to one single year only, 1928.

Land cleared for cultivation	11,071 hect.
New drains	6,269,245 metres
Materials for soil improvements	1,976,017 loads
Purchase of artificial fertilisers	126,631 sacks
» » seeds	1,353,300 kgs
» » feeding stuffs	1,186,837 »
» » hay	3,089,289 »
» » machinery	7,144 items
» » cattle and horses	11,581 head
» » new holdings	7,032 hect.
» » additional land for 2,241 existing holdings	19,536 »
Construction of new dwellings	3,225 build.
» » other new buildings	6,617 »
» » new accommodation for 27,252 head of cattle and horses	4,045 »

IV. Inspection and Educational Work of the Rural Banks.

The inspection of the co-operative rural banks, a work up to 1929 carried out by the Central Bank, is now entrusted by the State to the Central Association of the Co-operative Rural Banks (*Osuuskassojen Keskusliitto*), a body formed in 1928 in order to act as an educational centre for the agricultural co-operative credit movement. The country is divided into 20 inspection districts, each with one inspector domiciled in the district. In addition there are three chief inspectors. Each bank is inspected at least once a year. Inspection expenses are covered by a Government grant amounting in 1928 to nearly 1 million marks.

The inspection is very efficient thanks to the intimate collaboration between the inspectors and the Central Bank, which is empowered to withdraw credits granted from badly administered banks. On the whole, however, bank administration has been satisfactory. Since the beginning of the movement only about 50 local banks have been deprived of their credit and compelled to give up their activity, and only two of them have failed during all these years; their bankruptcy, however, in neither case causing the loss of a single penny to the Central Bank.

Besides the inspection work the Central Association also has taken over the vocational education formerly carried out by the Central Bank by means of courses, both oral and by correspondence. Some of the oral classes last for 3-4 weeks, and are especially intended for the education of accountants, others are of 2-3 days duration only. In its educational work the Central Association is assisted by the local associations of the rural banks, each covering an area of one or several communes. At the end of 1928 there were 79 such local associations with a membership of 596 rural banks.

From the very beginning one of the most important parts of the vocational education work of the rural banks has been the diffusion of co-operative and agricultural knowledge among the members by means of periodicals, leaflets and books. Thus, it has for instance, been made obligatory for all those members, who have received loans, to subscribe to "Pellervo", a journal dealing with co-operation and agriculture and published by the central organisation of all the different kinds of co-operative societies in Finland. The result of this proviso has been that taking the year 1927 nearly 84,000 members of the rural banks were regular subscribers to "Pellervo". In the same year 1,000 members subscribed to other trade journals and

over 3000 to "Suomen Osuustoimintalehti", a co-operative journal published by the Central Bank, the Pellervo Society and the other central co-operative organisations for the guidance of the administrative bodies and of the officials of the co-operative undertakings. It may also be mentioned that the Central Bank and the Central Association last year started a new journal "Osuuskassalehti", entirely for the guidance of the officials of the co-operative rural banks.

V. The Central Bank of the Co-operative Rural Banks.

In the introduction to this article it has already been mentioned that before any single co-operative rural bank was in existence in Finland, the Central Bank of the Co-operative Rural Banks was established in 1902 as a share company by a number of private persons, agreeing to surrender their shares to the rural banks joining the Central institution as shareholders. The company charter forbade the Central Bank to grant loans to other than rural banks engaging to become shareholders in proportion to the credit enjoyed. From 1924 all the shares held by private individuals have been repurchased and surrendered to the rural banks.

The share capital, which has been raised on several occasions, is at present 40 million Finnish marks. The State, which in 1925 joined the Central Bank as a share holder owns by far the greatest part of the company's shares (25 million marks) but is not entitled to any dividend. On the 15 million marks of shares held by the rural banks the maximum dividend of 4 ½ % is paid. The owned capital of the Central Bank amount to 70 million marks.

The highest administrative organ of the Central Bank is the Board of Administration, with 12 members, of whom the Bank of Finland, the Ministries of Finance and Agriculture each nominate one and the local rural banks nine. The highest number of votes which a shareholder can have at a general meeting is six, a stipulation, which, although the State is the largest shareholder, secures the majority vote to the rural banks. The current business of the Central Bank is entrusted to a Board of Directors, consisting of a managing director and four other members. For the control of the activities of the Bank the Government appoints a public controller.

The purpose of the Central Bank is to satisfy through loans granted to the co-operative rural banks the credit needs of members of the said local banks, special attention being devoted to small farmers. In addition the Central Bank is also entitled by its charter to grant loans directly also to other co-operative societies and associations, rural communes and parishes congregations. In practice, however, loans to these categories of borrowers are usually made through the local rural bank, of which of course the society or association, etc. must be a member.

The demands of the rural banks for credit from the Central Bank have been met by raising loans and by accepting deposits. Only in recent years, however, has this latter method contributed in any appreciable way to the working capital as up to 1920 the Central Bank, as already mentioned, had no right to accept deposits from other than member-societies, entitled in their turn to credit. By far the largest part of the working capital is raised by loans, State loans, loans from the Bank of Finland, from the Postal Savings banks, on Government security, and since 1926, from abroad (short time loans).

The indebtedness of the Central Banks at the end of the years 1924-28 is shown in the following table.

*Indebtedness of the Central Bank of the Co-operative Rural Banks
at the end of the years 1924-28.*

(million marks).

	1924	1925	1926	1927	1928
Government loans	116.5	97.4	156.9	216.6	245.1
Loans from the Bank of Finland	24.1	25.0	8.6	9.9	75.0
Other home loans	72.0	101.9	114.9	104.8	148.5
Foreign loans	—	—	65.6	118.5	189.2
Deposits	18.2	23.2	39.8	68.2	98.4
Total	225.8	247.5	385.8	513.0	701.2

The loans granted by the Central Bank to its members are in the form of advances on cash credits, bond loans, discounting of bills (since 1923) and long term amortization loans out of which latter the rural local banks grant similar loans to co-operative societies and, against mortgage security, to individual farmers. Among these various forms of loans, the advances on cash credit form the largest group.

The progress in the amount of credits granted during the five-year period 1924-1928 is shown in the following table.

Year	Credit granted to co-op rural banks	Credit granted to other co-op societies (million marks)	Total
1924	198.7	5.8	204.5
1925	272.0	3.7	275.7
1926	389.7	9.5	399.2
1927	530.6	18.3	548.9
1928	720.4	41.4	761.8

In recent years the business done by the Central bank has been rapidly increasing. The balance sheet total rose thus from only 17 million marks in 1920 to 785 millions at the end of 1928 and the turnover in the same time from 160 million marks to nearly 16,000 millions.

In spite of the increase in the business of the Central Bank its profits have remained very modest ; in 1928 for instance they amounted to 3.1 million marks only. This is due partly of course to the fact that the bank does not practise those forms of banking business which may result in great market gains, but chiefly to the fact that it is its first duty to provide the members with loans at the lowest possible rates.

H. L.

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FARM ECONOMICS

Certain Factors in Production Costs of Wheat in South Australia.

At the present time considerable efforts are being made in Australia to induce farmers to increase production of wheat. The coincidence of such a campaign with the announcement of a world surplus of wheat and with a general fall in prices has been a subject of comment, and it may reasonably be urged that it is of the first importance to ascertain whether such increased supplies of wheat can be grown at a remunerative price, or in other words whether costs of production can be so reduced as to make existing prices remunerative. Hence peculiar value attaches to studies bearing on the actual costs of wheat growing in relation to prices, and on the methods of reducing the expenditure per unit produced.

As regards the important wheat growing State of South Australia a detailed enquiry has recently been carried out by the Director of Agriculture into the value of capital invested in wheat farms in that State and its influence upon current costs of production.

This enquiry is based on the one hand on the accounts of the Turretfield Demonstration Farm which have included for eight years past detailed analyses of farming costs, and on the other on information collected by the District Agricultural Instructors from 129 representative farms. In regard to these latter the present day inventory values were ascertained in consultation between the farmers and the instructors, and the values do not therefore necessarily correspond to original purchase values or to values originally sunk in the property by the owner, but to actual values as they would be estimated in the event of a transfer of the property.

The following tabular statement gives the main data taken on an average of these 129 farms and compared with those of the Turretfield Demonstration Farm. It will be noted that the mean area of these farms is almost the same as that of the Demonstration Farm, but that the mean area coming each season under cultivation, whether as cropped or as bare fallow, is considerably less.

TABLE I. — *Mean data from 129 farms compared with corresponding mean data taken over eight years (1921-22 to 1928-29) from the Turretfield Demonstration Farm.*

	Means of 129 Farms		%	Turretfield		%
	Per Farm	Per Acre		Per Farm	Per Acre	
	acres					
Area	1,433	—	—	1,533	—	—
Area arable	1,226	0.86	85.54	1,266	0.83	82.58
Mean area cultivated	656	0.46	45.74	974	0.64	63.54
Mean area under crop	419	0.29	29.20	561	0.37	36.59
Mean area fallowed	237	0.17	16.54	413	0.27	26.94
	£ sterling	£ s. d.	%	£ sterling	£ s. d.	%
Land	6,689	4 13 4	59.70	10,838	7 1 5	64.01
Permanent Improvements	2,408	1 13 7	21.49	3,269	2 2 7	19.31
Mean Farm Plant	1,537	1 1 6	13.71	1,646	1 1 6	9.72
Mean Revenue-earning Live-stock	573	0 7 11	5.10	1,179	15 5	6.96
Total Capital	11,207	7 16 4	100.00	16,932	11 0 11	100.00

It should be explained that the area classed as arable land may include land not yet cleared, or only partially cleared, of the natural bush, and utilised for rough

grazing. In fact while the average of arable land on the 129 farms is estimated at 85.5 per cent. or 1,226 acres as above, the area cleared is only 81 per cent. or 1,163 acres. The proportion treated as bare fallow is probably larger than it would be in Europe, and considerable time and attention is given to this side of the farming (1). In regard to other items, the farm plant includes the working horses, while the revenue-earning live-stock consists mainly of sheep, the association of sheep with wheat growing being regarded as highly advantageous in Australia.

It will be seen that while the total areas of the mean of the 129 farms on the one hand, and of the Turretfield Farm on the other, are nearly the same and the arable areas available practically identical, the mean area under cultivation at Turretfield (63.54 per cent.) is considerably greater than the corresponding mean (45.74 per cent.) on the 129 farms. The value of the Turretfield land is 51 per cent. greater than that of the mean of the 129 farms, the value of the improvements 27 per cent. greater, the value of the farm plant per acre is exactly equal, and the value of revenue-earning livestock approximately double. It follows that the Turretfield Demonstration Farm may be accepted as being in a higher state of development than the mean of the 129 farms, 19 per cent. of the area of which remains still uncleared.

It is admitted to be probable that the values indicated in the above table for the mean of the 129 farms may be in some degree higher than the true mean for the whole State, if it were possible to obtain that figure. It was of course to be expected that, as in any similar inquiry, the farms selected would be likely to be somewhat above the average, and hence these 129 farms may not be strictly representative of the average South Australian wheat farm (2), but in the other hand the data may be accepted as giving a fairly accurate picture of a type of wheat farm to be found in the wheat-growing areas of South Australia. A point of some importance however is that in the 129 farms are included 47 on which tractors are in use. This proportion may not accurately represent the proportion between tractor and non-tractor farms for the whole State, and if so the aggregate capital value will be affected. The question of capital invested in horse-worked and tractor farms respectively is treated more in detail later in the enquiry.

It is however the interest earned on the capital invested in the farm which is the determining factor in success or failure of the enterprise, and both interest and depreciation charges can of course be met only out of revenue. On farms of the types under consideration interest and depreciation charges can in fact be met from two sources of revenue only, *viz.* :

1. Cereal crops, here assumed to be wheat, and
2. Revenue-earning livestock, here represented by sheep.

Interest charges may be assumed to be as follows : 5 per cent. on land exclusive of improvements, 5 per cent. on permanent improvements, 6 per cent. on farm plant, 6 per cent. on revenue-earning livestock. Depreciation charges may be reckoned as : 2 $\frac{1}{2}$ per cent. on permanent improvements, 10 per cent. on farm plant, 10 per cent. on revenue-earning livestock.

The following short statement shows the totals of these interest and depre-

(1) There may be as many as 13 cultivations on a 15 months fallow. (STAPLEDON R. G.: A Tour in Australia and New Zealand). London, 1928.

(2) From other data supplied by the Government Statist to the Director of Agriculture, the aggregate wheat-growing area in South Australia is calculated at about 12,360,650 acres divided among the 13,500 wheat-growers, giving a mean holding of 915 acres.

ciation charges for the 129 farms under review, with a comparative statement of the same charges expressed as means for the 82 horse-worked and the 47 tractor farms separately :

	Interest		Depreciation	
	per farm	per acre	per farm	per acre
Mean for 129 farms . . .	£581	9s. 0d. 8s. 1d.	£271	4s. 0d. 3s. 10d.
Mean for 82 horse-worked	£501	2s. 5d. 7s. 5d.	£232	17s. 6d. 3s. 5d.
» » 47 tractor . . .	£721	10s. 2d. 9s. 2d.	£383.	2s. 0d. 4s. 10d.

i. e., the aggregate interest and depreciation charges are over 29 per cent. higher on the tractor farms than on the horse-worked farms.

The full statement of the differences between the horse worked and the tractor farms shows that on the whole the tractor farms are the larger, that they have a rather larger proportionate area under crop, and are in all respects more highly capitalised. These facts would seem to indicate greater affluence on the part of the tractor owners, whether due to the introduction of tractors or not. At the same time it is clear that the tractor farms have to meet increased burdens on production for which increased yields are required.

It may be added that in a paper read by the Director of Agriculture on the occasion of the fortieth annual Congress of the Agricultural Bureau of South Australia on Some Aspects of Tractor Farming in Australia (1), the question of the relative costliness of tractors on the farm is discussed at some length, and in relation to accountancy data obtained from a number of farms (115) in regard to farm motive power before and after introduction of tractors. It is shown that relatively to horses, tractors are from the first handicapped by high initial costs and depreciation rates, and that in addition on the average farm fuel and oil are more costly than home-grown hay, even apart from the consideration that tractors, petrol and oil are all imported into Australia from abroad while horses and their feed are home products. The writer adds that such expenditure would only be justified if tractors could be shown to cheapen production very appreciably, but that his impression is that the reverse is the case.

In regard to the general enquiry, it is of importance to apportion the interest and depreciation charges between the two sources of revenue available, crops and revenue-earning live stock. The interest on land value will be taken first.

Referring to Table I, the mean value of the land of the 129 farms is shown as £4 13s. 4d. but this figure is calculated in reference to the total (1,433 acres), cleared and uncleared, of the farms. Taking only the 81 per cent. or 1,163 acres of cleared land, which may be assumed to be arable land as likely to be the first cleared, the value will be greater of such cleared arable than of the remaining types *viz.* uncleared arable (63 acres) and uncleared not-arable (207 acres). The value assigned to the cleared arable land has been £5 8s. 5d. per acre, the other types having proportionately lower values (making the average as shown in Table I, £4 13s. 4d.). It is on this higher value that interest charges on arable land must be reckoned. A further consideration in apportioning these charges between harvested crops and revenue earning livestock is that in Australian practice, in addition to the arable land not brought under cultivation in a given season, land under crop and land being fallowed are always available for grazing over a portion of the year, in the Turretfield practice, here assumed, for three months each season.

(1) See *Journal of the Department of Agriculture of South Australia*. Vol. XXXIII, N. 3. Adelaide, October 1929, pp. 224-236.

The following is the calculation of land interest charges on livestock:

Interest on 507 acres of arable land temporarily out of cultivation, (i. e. on 1,163 acres cleared <i>less</i> 656 cultivated in any season) valued at £5 8s. 5d. per acre at 5 per cent.	£	s	d
	137	8	4
Three months interest on 219 acres of stubble and on 237 acres in process of fallowing.	44	9	1
Total. . .	181	17	5
Less three months grazing of 16 horses estimated	11	10	11
Hence total land interest charges to be debited against revenue-earning livestock	170	6	6

The interest charges at the same rate on the mean area of cleared land, 1,163 acres, would be £315 4s. 5d., deducting the above charge on the livestock, the interest charges on land to be debited against harvested crops are accordingly £144 17s. 11d.

As regards the other charges, it is assumed that interest and depreciation charges on permanent improvement will be charged two-thirds to crops and one-third to revenue-earning livestock, and the same charges on farm plant nineteen-twentieths to crops and one-twentieth to live stock. The interest and depreciation charges on live stock will naturally be charged exclusively to live stock.

Referring again to Table I as basis, the following complete statement of the apportionment is obtained

	Crops						Revenue earning Livestock					
	Interest			Depreciation			Interest			Depreciation		
	£	s	d	£	s	d	£	s	d	£	s	d
Land	144	17	11	—	—	—	170	6	6	—	—	—
Permanent improvements valued at £2408 at 5% = £120 8s apportioned	80	5	4	—	—	—	40	2	8	—	—	—
do at 2 1/2 % = £60 4s apportioned	—	—	—	40	2	8	—	—	—	20	1	4
Farm Plant valued at £1537 at 6% = £92 4s 5d apportioned	87	12	2	—	—	—	4	12	3	—	—	—
do at 10 % = £153 14s apportioned	—	—	—	146	0	4	—	—	—	7	13	8
Livestock valued at £573 at 6 %	—	—	—	—	—	—	34	7	7	—	—	—
do at 10 %	—	—	—	—	—	—	—	—	—	57	6	0
	312	15	5	186	3	0	249	9	0	85	1	0
Total Interest and Depreciation charges	£ 498 18 s 5 d						£ 384 19 s, 0 d					

The next step is to determine the extent to which these charges affect costs of production of crops and livestock operations respectively.

The mean area under crop in the 129 farms has been given as 419 acres (see Table I), assumed for the sake of simplicity to carry wheat only. From this area must first be deducted an area sufficient to meet the hay requirements of the working horses. On the basis of values the mean number of these horses may be taken as 16, which at the rate of five tons per annum per horse gives 80 tons for hay, representing on an average farm in an average season about 80 acres of wheat reserved

for hay. Hence the mean area of harvested grain crops is reduced to 339 acres, on which an interest charge of £312 15s. 5d. represents 18s. 5d. per acre, and a depreciation charge of £186 3s. represents 11s. per acre (the former being lower than the Turretfield figure, and the latter higher). Total charges of this nature to be recovered from grain crops are accordingly 29s. 5d. per acre. On a 12 ½ bushel per acre average, which is the mean yield for the State, this would represent 2s. 4d. per bushel; on a 15 bushel average, 2s. a bushel; and on a 20 bushel average, 1s. 6d. It may be added that on tractor farms and on the basis of a 12 ½ bushel yield, the charge on each bushel is 2s. 4d.; on the horse-worked farm it is 2s. 1d.

On the valuation basis and making allowance for other minor revenue-earning livestock, a flock of 489 sheep, including 479 ewes, may be assumed as the mean. With similar allowances, the charges become reduced to £224 7s. 7d. for interest and £72 11s. 8d., for depreciation, or 9s. 4d. and 3s. respectively per ewe, or an aggregate charge of 12s. 4d. per ewe.

So far calculations have related to an assumed mean of the 129 farms under review, but it is obvious that the value per acre of capital invested must actually vary with the varying dimensions of the farms concerned; accordingly to obtain more precise and therefore more practical results it is essential to divide these 129 farms into size groups and to reclassify the returns obtained on that basis. The farms may be divided as follows:

Number of farms concerned	Descriptions	Range of areas within each class, acres	Mean areas for each class acres
23	Very large	2,001 and over	3,007
35	Large	1,201 to 2,000	1,654
38	Medium size	801 to 1,200	988
27	Small	401 to 800	633
6	Very small	400 and under	287

The following is a statement of the capital investments for each type of farm as above described: the items corresponding with those already selected for Table I.

TABLE II. — *Value of Capital invested in Farms of varying sizes.*

I. — Data for total areas of mean farms of varying groups.

	Very large	Large	Medium	Small	Very small
	acres	acres	acres	acres	acres
Mean area	3,077	1,654	988	633	287
Mean area cleared	2,186	1,352	929	615	279
Mean area arable	2,462	1,424	804	602	263
Mean area cultivated	869	827	586	448	182
Mean area under crop	603	632	363	251	125
Mean area fallowed	266	295	223	197	59
	£	£	£	£	£
Mean value of land	7,368	7,421	6,575	6,155	2,952
Mean value of improvement	2,556	2,654	2,328	2,303	1,892
Mean value of farm plant	1,877	1,835	1,427	1,192	729
Mean value of revenue earning stock	1,009	666	456	319	221
Mean total capital	12,810	12,576	10,786	9,969	5,294

II. — Data per acre of mean total holding.

	Very Large	Large	Medium	Small	Very small
	acres	acres	acres	acres	acres
Mean area arable	0.80	0.86	0.91	0.95	0.92
Mean area cleared	0.89	0.82	0.94	0.97	0.97
Mean area cultivated	0.29	0.50	0.60	0.71	0.64
Mean area under crop	0.20	0.32	0.37	0.40	0.43
Mean area fallowed	0.09	0.18	0.23	0.31	0.21
	£ s d	£ s d.	£ s. d.	£ s. d.	£ s. d.
Mean value of land	2 7 11	4 9 9	6 18 1	9 14 6	10 5 8
Mean value of improvements	0 16 7	1 12 1	2 7 1	3 12 9	4 16 11
Mean value of farm plant	0 12 2	1 2 2	1 8 10	1 17 9	2 10 9
Mean value of revenue-earning livestock	0 6 7	0 8 1	0 9 3	0 10 0	0 15 5
Mean total capital	4 3 3	7 12 1	10 18 3	15 15 0	18 8 9

The second part of the above table shows how heavily capital commitments must weigh upon the small landholder relatively to the larger one. Thus capital invested in a 287 acre farm is close upon one-half of that invested in a 3,077 acre farm, and on a per acre basis these figures represent an investment of £18 8s. 9d. per acre, as compared with one of £4 3s. 3d. These high land values of course reflect the natural advantages of the small farm, *e. g.*, its greater natural fertility and lower proportion of waste land, its proximity to markets, etc. and so far cannot be regarded as in themselves a drawback or burdensome to the small farmer. It is the interest and depreciation charges per acre on improvements and farm plant which, together with rent or interest on land values, weigh so heavily as having to be met yearly from the season's production. As a matter of fact these charges can be shown to be more than four times as high per acre for the "very small" farm as they are for the "very large" size group, *i. e.*, 28s. 1d. as compared with 6s. 9d. (11s. 11d. having been already shown to be the figure representing these charges per acre on the "mean" farm). It is not however correct to conclude that large scale farming should supersede the small family type of farming; the small farm apart from the lower labour costs may have greater producing efficiency as a result of the close personal attention given to field operations and other causes. The conclusion that does emerge is that the small farmer must, if he is to maintain his position, achieve higher yields (1).

The preceding figures relate to the whole arable areas of the respective size groups. If these charges are instead apportioned to the actual mean areas harvested of the various size groups of farms, it will be possible by calculation on the same basis as for the mean of the 129 farms to obtain the incidence of the charges per bushel, assuming a parity of yield per acre, *viz.* the 12 ½ bushels which is the mean State yield over ten years. The combined charges are then as follows: 4s. 3d. per bushel on the very small farm, mean acreage 287; 3s. 11d. on the small farm of 633 acres; 2s. 10d. on the medium farm of 988 acres; 2s. 2d. on the large farm of 1,654 acres; and 1s. 8d. on the very large farm of 3,077 acres. As the first of these, 4s. 3d., is very little if at all below the normal value of wheat, it is abundantly

(1) See Economics of Small Mixed Farming in Australia, *International Review of Agriculture*, Part II, January 1930, an article based on an earlier enquiry also made by the Director of Agriculture in South Australia.

clear that the small farmer cannot make his farm pay unless his yields rise above the State normal mean.

It may be added that mean interest and depreciation charges per ewe also decrease fairly regularly with every increase in size, but to a far less degree than in the case with crops, and in the case of the very small farms, these combined charges tend to be absorbed rather by pigs and poultry than by sheep.

It now remains to show how the effect of high interest and depreciation charges may be met by progressively rising mean crop yields.

As a basis for the discussion, costs of growing wheat at Turretfield may be taken; these over seven successive seasons have been represented by £4 16s. an acre, or 4s. 11d. a bushel on a 19.64 bushel mean yield. It is of course understood that with the prices of wheat that have been ruling for the past year, these costs stand at too high a figure, but it will serve as a convenient basis for calculation. It may be assumed that on the "very large" farms, or size group with average acreage of 3,077 acres, an average yield of 10 bushels is obtained, as the large farms of South Australia mainly lie in a district (the Mallee) in which mean yields are usually below those of the State as a whole. By the calculation referred to above interest and depreciation charges on this group of farms may be shown to be £1 os. 7d. per acre or 2s. 10d. a bushel per 10 bushel harvest, which when deducted from 4s. 11d., the value per bushel assumed normally to balance inclusive expenditure, leaves the sum of 2s. 10d. a bushel for all other costs, including labour. On farms of the lower size groups the interest and depreciation charges will be higher, hence proportionate losses will be incurred on these farms, unless the effect of the increased charges is in some way neutralised, the obvious method being that of proportional increases in mean yield per acre, by which, at least up to a certain point, a reduction in costs per bushel may be effected. For purposes of comparison, it may be assumed that the cost of each additional bushel on any farm would correspond to its share in the interest and depreciation charges on the particular type of farm *plus* one half of the "other" costs per bushel of the size-group immediately larger. In this way the number of additional bushels required to balance the effect of increased charges may be calculated. *The following table is illustrative only:*

TABLE III. — *Effect of High Interest and Depreciation Charges as balanced by progressively rising Mean Crop Yields.*

	Acres	Acres	Acres	Acres	Acres
Mean areas of the different size groups	3,077	1,654	988	633	287
	Bushels	Bushels	Bushels	Bushels	Bushels
Requisite mean yields per acre	10	11.86	14.05	17.80	18.87
Costs per acre:					
Interest and depreciation charges	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
All other costs	1 0 7	1 7 1	1 14 11	2 8 9	2 12 11
	1 8 7	1 11 3	1 14 2	1 18 8	1 19 10
Total . . .	2 9 2	2 18 4	3 0 1	4 7 5	4 12 9
Costs per bushel:					
	s. d.	s. d.	s. d.	s. d.	s. d.
Interest and depreciation charges	2 1	2 3	2 6	2 9	2 10
All other costs	2 10	2 8	2 5	2 2	2 1
Total costs . . .	4 11	4 11	4 11	4 11	4 11

The figure 11.86 bushels for the second size group of farms is reached as follows: taking half the "other" costs per bushel on the 3,077 acre farm, or 1s. 5d., and subtracting from 4s. 11d., the difference is 3s. 6d. per bushel, which has to go to meet the increased interest and depreciation charges on the smaller acreage under crop. This increase per acre has been ascertained to be 6s. 6d., i. e., £1 7s. 1d. less £1 os. 7d. Dividing this 6s. 6d. by 3s. 6d., the quotient 1.86 represents the number of additional bushels per acre required to balance inclusive expenditure. The same process may be applied to obtain the increased yield figures for the other size groups. It will be noted that the calculated costs per acre of an 18.87 bushel crop, viz., £4 12s. 6d. approaches very closely to the actual costs of a 19.64 bushel crop on the Turretfield Demonstration farm, or £4 16s. per acre.

Actual figures of wheat yields on South Australian farms are available, returns having been made for 1926-27, a year when the average State yield was 12.87 bushels, by 12,738 wheat growers in the State. The following are the figures, showing a somewhat remarkable range of productivity (1).

TABLE IV. — *Classification of 12,738 Wheat Farms in South Australia according to Productivity: 1926-27.*

Production per acre	Number of farms	Area of crop		Production	Average yield per acre
		acres	bushels		
Under 3 bushels	303	49 627	106 521		2 15
3 to 6 bushels	6,210	236,770	1,088,678		4 58
6 to 9	2,045	483,317	3,628,641		7 51
9 to 12	2,372	579,493	5,066 460		10 30
12 to 15	2,033	469,099	6,232,221		13 28
15 to 18	1,879	391,692	6,364,917		16 25
18 to 21	1,438	284,199	5,467,599		19 29
21 to 27	1,103	216 927	5,013,904		23 11
27 to 33	274	47 364	1,370 677		28 94
33 to 39	60	8,012	278,880		34 81
39 bushels and over	21	1,863	45,213		42.53
Grand total	12,738	2,768,403	39,558,711		12 87

It has been shown that the strangling influence of interest and depreciation charges can only be met by increased yields per acre, but it should be added that the extent to which these charges are a burden varies greatly with the district. Classifying the 129 farms according to the districts in which they are situated, it is found that with the present decennial yields the incidence of the interest and depreciation charges is as shown on Table V (p. 249).

From Table V it will be seen that the district in South Australia in which wheat may probably be produced at lowest cost is the relatively undeveloped district of Eyre Peninsula where farms are largest and yields lowest. The districts in which the charges attain to 3s. a bushel or over clearly cannot secure profitable crops at present prices unless crop yields can be increased in excess of their mean yields as shown above.

In regard to charges per ewe, the higher figures in the two last districts are due to undeveloped conditions of farms which do not yet admit of adequate stocking.

(1) See a paper read by the Director of the Waite Agricultural Research Institute on the occasion of the fortieth Annual Congress of the Agricultural Bureau of South Australia on "The Necessity for Increased Efficiency in Wheat Production". *Journal of the Department of Agriculture of South Australia*. Vol. XXXIII, No. 4. Adelaide, November 1929.

The lowest cost 8s. 1d. per ewe implies relatively low land values with adequate stocking. It has already been remarked that the association of sheep with wheat growing is generally regarded in Australia as highly advantageous. Sheep utilise the roughage on the stubbles, and also that which springs up on the fallows after every rain. In this way these growths are converted into cash values, and in addition the fallows are kept clean and well conditioned which is essential to their moisture conserving function. Sheep moreover add to the profits of the farm from the relatively small proportion of labour and attention they require in comparison with the monetary returns. The maximum forage demands of a flock of ewes and their lambs are made just when there is the flush of spring herbage and the lambs are sold before the grass dries off.

TABLE V. — *Incidence of Interest and Depreciation charges on harvested crops and livestock in the various districts of S. A.*

	North	Middle North	Central	South East	Murray Mallee	Eyre Peninsula
Number of farms concerned.	18	17	18	15	20	41
Mean total capital	£ 9,818	£ 18,305	£ 12,552	£ 11,513	£ 11 235	£ 8,129
Mean capital per acre . . .	£ 10 17s.	£ 15 15s. 4d	£ 15 16s. 4d	£ 8 18s 10d.	£ 8 8s 9d.	£ 3 15s 2d.
Mean areas (acres) . . .	905	1,162	794	1,288	1,331	2,162
Mean yield per acre 1916-26 (bushels)	12.67	16.47	14.34	12.44	8.81	7.81
Interest and depreciation charges :						
(a) per acre of total holding .	16s 1d	22s. 4d	23s. 0d	14s. 7d.	12s. 6d	6s 3d.
(b) per bushel of wheat . . .	3s. 3d.	3s 4d.	3s 7d	3s. 4d	2s 9d.	2s 3d.
(c) per ewe	13s. 1d	14s. 2d.	15s 5d	8s 1d	17s. 4d.	11s. 1d.

In conclusion, attention should be drawn to the extent to which costs per bushel, whether interest and depreciation charges or other costs, including labour, decline progressively with an increase in yields per acre, while cost per acre rises progressively.

This appears from calculations made in connection with Turretfield results :

TABLE VI. — *Influence of Varying Yields on Production Costs of Wheat at Turretfield.*

	Mean Yields per Acre				
	Bushels 10.00	Bushels 15.00	Bushels 19.64	Bushels 25.00	Bushels 30.00
	Estimated inclusive costs per acre (1)				
	£ s. d. 4 1 6	£ s. d. 4 9 9	£ s. d. 4 16 0	£ s. d. 5 4 0	£ s. d. 5 11 6
	Estimated costs per bushel				
	s. d. 3 9	s. d. 2 6	s. d. 1 11	s. d. 1 6	s. d. 1 3
Interest and Depreciation	4 5	3 5	3 0	2 8	2 6
All other costs					
Total . . .	8 2	5 11	4 11	4 2	3 9

(1) The area harvested is assumed to remain the same, and hence interest and depreciation charges are taken as constant (at £ 1 17s. 10d.); other costs increase with increase in yield per acre.

The above are calculated estimates and not recorded facts, which are exceedingly difficult to secure and are never strictly comparable on account of unavoidable variation in the conditions. The following correspondences of recorded facts with calculated data are however of interest.

A 10 bushel harvest is calculated to cost 8s. 2d. per bushel; in 1923-24 a 9.93 bushel harvest cost 8s. 8d. A 15 bushel harvest is calculated to cost 5s. 11d.; in 1922-23 a 15.08 bushel harvest cost 5s. 5d. per bushel. A 25 bushel harvest is calculated to cost 4s. 2d. a bushel; in 1925-26 a 23.42 bushel harvest cost 4s. 3d. a bushel. With present day prices it is obvious that still further reductions in cost are essential to remunerative farming.

On the whole it may be said that interest and depreciation charges bear heavily when the mean yields per acre are below 20 bushels in developed areas. The burden may be reduced to some extent by an extension of the harvested area enabling the full utilisation of the available equipment. Improved farming practices, by which the yield per acre can be increased, are also suggested as a possible remedy. But these can be effective in dealing with the situation only in so far as the adoption does not raise the costs of production per bushel unreasonably. It would appear that, at the present time, mixed wheat-sheep farming may be considered, at least in certain districts, as a more or less effective improvement of this kind, while the substitution of mechanical for horse power does not seem, on the whole, to offer a satisfactory solution, as it tends to increase costs.

C. H.

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PERKINS Arthur J. (Director of Agriculture, South Australia). An Enquiry into Present Day Value of Capital Invested in South Australian Wheat Farming, and Its Influence upon Current Costs of Production *Journal of the Department of Agriculture of South Australia*, Vol. XXXIII, No. 9. Adelaide, April 1930.

Eighth Annual Report of the Turretfield Demonstration Farm (1928-29). *Journal of Department of Agriculture of South Australia*, Vol. XXXIII, No. 4. Adelaide, November 1929.

Market Gardening in Switzerland: Its Present Position and Economic Importance.

It is difficult, if not practically impossible, to determine the importance of market gardening in Switzerland and its relative position among the other agricultural activities of the country, since accurate figures both for the area cultivated and for yield are not available. For example one set of statistics gives the area as 8,970 hectares of which 2,840 hectares represent market gardens on commercial lines, supplying the main centres of consumption and the preserved food industry, while other statistics state that the area devoted to market gardens is 10,449 hectares. To be on the safe side, it may be said that approximately $\frac{1}{2}$ % of the cultivated area of Switzerland is given over to market gardening. The gross return is estimated at 33 million francs and represents 2.22 % of the gross return from Swiss agriculture, but this last figure is as difficult to check as the first and can only be regarded as an approximation.

Hence in the present article an attempt will be made to distinguish between the data, and in order to obtain a fair idea of the economic importance of Swiss market gardening, production on a commercial scale for the supply of the centres of consumption and of the preserved food industry will be first discussed, and afterwards market gardening, carried out "as a form of domestic agriculture", to use the expression adopted by the Swiss Peasants' Union.

* * *

In the neighbourhood of the centres of consumption the position of vegetable growing on commercial lines may be regarded as satisfactory, when the gardens are managed by really competent growers. The purchase price of land and rents are high and the capital required and current expenses are considerable, but the gross return, which is reckoned at from 15,000 to 17,000 francs per hectare, provides adequate recompense for the grower and a normal return on his invested capital. The main difficulty in the way of higher profits, and of an extension of market gardening, desirable for maintaining supplies to hotels at a distance from the centres of production, lies in the competition of countries in which climatic conditions are more favourable than are conditions in Switzerland for the growing of early vegetables, etc. There can be no question of the suppression of this competition, even by protective tariffs; at the same time a country such as Switzerland might properly consider a special form of customs protection, the charges under which would vary according to the season and the kind of vegetable, and would only affect luxury varieties. The true facts of the case are as follows: competition supplies the consumer with early vegetables at a high price, and though these vegetables are gathered early and before they are fully ripe and are in consequence inferior in taste, quality and substance, yet when the native products come on the market the consumer is already surfeited and requires no more. Further these vegetables are a luxury diet, for, admitted the pleasure of eating out of season vegetables, it is always possible in the majority of cases to wait for the native product without any greater loss than the deferred satisfaction of a whim. A high duty on early vegetables, imposed at the season when there is no native production, would prove an effective safeguard of such production without any prejudice to the great mass of consumers. Certain objections may not unreasonably be raised against this argument. At this season and more particularly in March and April, there is an almost complete absence of native vegetables; importation from abroad is a necessity for the hotel proprietors; the humblest consumer is accustomed to his early vegetables. Moreover it is open to question whether the dearness of foreign vegetables does not bring about a corresponding rise in the price of the home-grown and hence it is unlikely that the idea of such a duty will gain ground. Vegetable imports from the South have also brought about the almost complete disappearance of native early kinds which used to be cultivated in the immediate neighbourhood of the towns by professional market gardeners with the aid of a complete equipment of frames.

In any case the retort of the grower to the importer, when the question of season no longer enters, may be noted. The cultivation of the endive, a plant of essentially Belgian origin, is now being undertaken by a constantly increasing number of market gardeners, who are well satisfied with the results.

* * *

Market gardening on the commercial scale for supplying the preserved food factories is also in the hands of specialists, but it makes less demand from the point of view of technical knowledge, capital required, working expenses and land costs than the market gardening that supplies consuming centres. The gross return is also lower but, when well managed, the production of the raw material for the preserved food factory is a satisfactory proposition for an intelligent grower and might be considerably bettered, especially, as will be seen later, through an improved sales organisation. This kind of cultivation is extensive rather than intensive and, being carried out on rich and easily watered lands, it lends itself to

economical working through mechanical methods of tillage, and it employs ordinary labourers, who frequently are not permanent residents in the district.

In certain aspects this form of cultivation is of particular importance, as it produces an increased element of diversity in agricultural production and exercises a check on the tendency to single crop cultivation which, for reasons that are well known, is always disadvantageous.

Variety in production, naturally when not carried to extremes, implies a spreading of risks and a mitigation of the effects of the price crises which temporarily affect certain branches of agricultural production, the reference here being more particularly to stock breeding and the production of fodder crops on which it depends. When a price crisis arises in connection with dairy products, such as is being severely felt in Switzerland to-day, the agriculturist whose farm provides other resources and possibilities can find a way out far more easily than the one who is an extensive or exclusive grower of fodder crops.

Some part of the products of the commercial market gardening now under consideration is used in ordinary consumption, but, speaking generally, it is closely bound up with the existence and the activities of the food preserving firms as to which a few words may be said here. Formerly there were a dozen preserved food factories in Switzerland. Some of these are now completely closed down and most of the remainder were bought up in 1926 by a single firm with the object of establishing a kind of Trust, with which the growers, who had hitherto for the most part worked as isolated units, are now bound to deal.

Before and also after the World War the food preserving industry bought most of the vegetables that it required, especially peas and beans, from abroad. During recent years and even during the war period, home cultivation has been considerably developed and it became possible for the preserving houses to obtain supplies within the country, except as regards asparagus, although before long Switzerland will be in a position to make complete provision also for this vegetable. The factories however are still importers of vegetables and even of preserved vegetables as the result of the depreciation of exchange values in certain countries. They obtain their supplies from their branch houses in France, Spain, Germany and Holland, and it is by no means impossible for the preserved vegetables to be resold as Swiss products, so that a raising of the customs duties on imported preserved vegetables, would be advantageous.

There is to be observed in this sphere, as in so many others, the complete absence of any cohesion or contact between the grower and the manufacturer and between activities really interdependent and complementary, but too often isolated even when they are not in opposition. This is not entirely true as regards the industrial cultivation of vegetables and the food preserving factories, for the factories enter into contracts with the growers for their crops, especially of peas and beans, so that there is no surplus production in these cases. It is otherwise however with other kinds of vegetables and the grower often finds a difficulty in getting rid of his products as he is ill informed as to demand, markets and prices, and sale organisation is defective. From the point of view of an improved organisation both of production and sales, it is desirable that producers' co-operative societies, such as already exist in other countries, should be established. At present the growers work as independent units and have no direct relations with each other or with the industries which utilise their products. The benefits to be derived from these co-operative societies hardly need to be stated, and would include in the first place improved organisation and control of production, more closely related to the requirements of purchasers in respect of quantity, variety and quality.

It would also be advantageous that producers' representatives should have a place on the boards of direction of the industrial firms in order to bring about a better understanding and co-ordination of the interests of both parties. The co-operative societies themselves could also establish one or more offices with the duty of supplying information as to markets and prices and as to the outlook for production and sales. The societies might exercise a valuable influence on the improvement of production by publishing technical and scientific information and might assist in bringing about a more satisfactory adaptation of production to the requirements of the conversion industries and of ordinary consumers, as also a more secure market through the establishment of contracts for the purchase of produce, together with a reduction of costs by arrangement for the joint purchase of raw materials, implements, etc.

In any case however the commercial process known as "Sales on Commission" (*Vente à la commission*) ought to disappear, for if it is to be maintained and become general, it will nullify any kind of protection for fruit and vegetable growing. The procedure is as follows. When in a producing area abroad there is a temporary glut in supplies, the producers' co-operative societies, with the object of checking any fall in prices in their district, offer the Swiss dealers by telegram complete truckloads of products. The trucks are consigned to a Swiss railway-station and the purchaser resells, taking a commission of 10-15 % in addition to the transport and delivery charges. This system is effectively a kind of dumping involving serious risk to home production, aggravated by the fact that the preserving houses can, by thus taking whole truck loads, obtain their supplies at lower prices than those asked for native products. A further reform that might probably with advantage be introduced gradually, would be the suppression of local markets, which involve much loss of time both to the seller and purchaser. Co-operative societies for the sale of produce able to supply vegetables in suitable condition to telephone orders, could do much to mitigate the trouble of prolonged detention of supplies on the markets.

The co-operative society established only a few months ago by the Market Gardeners Association of Geneva may be quoted as an example. Under the arrangements of this society the grower no longer goes to the market, thus gaining considerable time, but takes his vegetables to the co-operative society which accepts his deliveries in bulk. The co-operative society classifies the goods and puts them on the market or sends them to the hotels which are its principal customers. It is stated that demand at present exceeds the possibilities of supply. In this way an additional advantage may be gained, for it will be possible for the society to exercise a certain control over production by requiring members to grow those kinds of vegetables which find the readiest market. The experiments will be watched with interest and may be worth repeating.

It is necessary further to state that transport charges are frequently prejudicial to the ready disposal of products, particularly of those of low value. It is however only just to recognise that the Swiss Railways under their present far seeing direction are constantly improving their facilities for the transport of agricultural produce.

Is any extension of the cultivation of vegetables for the preserving factories desirable and can it be justified? The answer of the manufacturers is in the negative. During the last twenty years a number of factories have had to close down on account of inadequate demand. In addition there are very few large centres of consumption in Switzerland and it is an easy matter to supply them with fresh vegetables. At the same time the preparation of preserved foods for household use is very highly developed and this production is a costly matter.

On the other hand the answer of the producers is in the affirmative. Switzerland possesses an abundance of land including reclaimed land and alluvial plains, etc. particularly well adapted for vegetable growing but it is necessary that the products should find an assured market and the crops be grown under contract. It is further advisable to encourage the cultivation of crops with which producers and particularly agricultural workers are most familiar in order to secure that production is kept on systematic and profitable lines.

* * *

The position of vegetable growing for domestic purposes or kitchen gardening may now be considered. From the economic standpoint it is a form of production of the highest importance for every farm household and in consequence for the country as a whole. It may be described as "auto-production", that is production for the satisfaction of the individual needs of the household. Among its special advantages reference may be made to the following: the good quality and freshness of the products as compared with those of similar goods bought at shops, etc., the low net cost of farm products, the reduction in cash expenditure and incidental costs due to attendance at markets, the elimination of the influence of trade price fluctuations. The importance of kitchen gardening has been fully recognised by many townsmen, to judge by the development of workmen's gardens in Switzerland, as elsewhere, on the outskirts of populous centres and their continuance after the return to normal conditions of supply when the war was over.

A reference to the statistics of the Swiss Peasants' Union for holdings of from 10-15 hectares shows that "auto-production" is on the decrease. Whereas during the period from 1901 to 1913, 25 % of the products were consumed on the farm. in 1925 this percentage fell to 18 or, in other word, 82 % of the produce was sold. What is the reason for the change? Is it due to the fact that the policy of selling is the more advantageous and lucrative? This is not the case. One cannot avoid the impression that the agriculturist is of opinion that he derives his chief benefit from that which can be converted into cash and will fill his purse.

It is in fact the case that work in the farm kitchen garden is undertaken with a certain reluctance, when there is nothing else to do, and with a kind of feeling that time is being wasted, because the vegetables pass direct from the garden to the home kitchen and are not sold for cash or even reckoned in terms of money values when no books of accounts are kept, as is generally the case. Hence the fallacious argument that a kitchen garden is not a paying proposition because it does not bring in any money, which is most misleading. It is interesting to learn, once more with the aid of the reports of the Swiss Peasants' Union how, without reckoning wages, the budget for the maintenance of a male worker in a rural household is made up. The items are as follows: meat, 22.50 fcs.; bread, 12.31 fcs.; groceries, 21.93 fcs.; cheese; 7 fcs.; flour, etc., 4.60 fcs. Special attention may be called to the expenditure on meat and groceries. This expenditure would be diminished, if vegetables were grown on a larger scale for direct consumption and for preserving for winter use. Herein lies the way to a real economy which would also help to introduce a healthier and less costly dietary.

Far too many households, which possess the necessary land, buy rice, flour and macaronis on a larger scale than is really required. Undoubtedly, especially with the farmer, the question is one of taste and also of a distrust of every thing that is not the large marketable vegetable. The housewife also in certain cases prefers farinaceous foods which require less preparation and cooking. At the same time a well cultivated garden can supply food ~~stuffs~~ in immense variety.

In certain areas of German Switzerland where the growing of fodder crops is exclusively undertaken, it may be noted that frequently the peasant's household is losing its rural character and tending to become assimilated to the townsman's, but, as a direct consequence of this tendency, his cost of living has risen considerably. There is an obvious lesson to be drawn here and it is time to cease to treat the vegetable garden as a poor relation.

* *

The question of growing vegetables as field crops calls for brief reference. This kind of agriculture is valuable as supplying the requirements of the farm and may prove quite remunerative, if skilfully exercised on good quality lands and with an adequate staff of labourers. It is a form of specialisation to which it would appear that the small farmer might well apply himself in certain cases with the object of increasing his returns. In this field of specialisation, in which the technical knowledge and personal inclination of the farmer find scope, may be included the growing of selected seeds and of seed potatoes, the cultivation of trees and shrubs as also the production of such field vegetables as are easily transported and preserved and give a high price per unit of weight.

In conclusion attention may be drawn to the farms in the upland regions of Switzerland, which might well devote more time and space to vegetable growing in order both to reduce household expenses and to increase receipts by sales to hotels and to the inhabitants of the lowlands when means of communication allow. It is certain that the fine, rich and well flavoured vegetables from the mountains would find a ready sale. As things are the vegetable merchants range the mountains and do good business. The efforts made in Switzerland to restore the good name of vegetable growing in the upper regions of the Alps deserve special notice. Model gardens have been established and are maintained by the public authorities and there is every reason to believe that they will give good results.

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ECONOMIC AND SOCIAL CONDITIONS OF THE AGRICULTURAL CLASSES

Some Observations on the Rural Exodus in Estonia (1).

The steady diminution of the rural population in Estonia is shown by the following figures :

	Total population	Rural population Number	% of the total
28 December 1922	1,107,393	786,307	71.0
1 January 1927	1,116,343	772,315	69.2
1 January 1928	1,114,941	761,295	68.3
1 January 1929	1,116,553	759,071	68.0
1 January 1930	1,115,817	754,811	67.7

Hence the decrease, in absolute figures, from 1922 to 1927, was 13,992, or about 3,500 on an average each year. In 1927, the rural population diminished by 11,029 ; judging from the figures of the total population which showed a decline during the year 1927, a proportion more or less high of those who left the rural areas appear

(1) Based on data sent to the International Institute of Agriculture by M. J. UMARIK, Chief of the division of Agricultural Instruction in Estonia, in response to a questionnaire on the rural exodus.

to have emigrated. In 1928 the decline in the rural population was as much as 2,224, and in 1929 the figure of 4,260 was reached. Taken altogether from 1922 to 1930, the number of inhabitants of the rural areas in Esthonia has decreased by 31,496 units: the annual loss is thus on the average about 4,500.

This decline in the numbers of the rural population is accompanied by a fairly considerable increase in that of the large towns and boroughs. The urban population has in fact increased from 1922 to 1927 by a total of 22,952 inhabitants, or on the average nearly 5,740 per annum.

In 1927 the year in which the rural exodus attained a particularly high figure, in consequence probably of the poor harvest of the previous season, the increase in the town population was 9,608 persons. In 1928, it was 3,836, and in 1929, it was 3,524. From 1922 to 1930, the total increase in the urban population has been 39,920, or about 5,700 per annum.

Thus, in Esthonia, as in many other countries, the rural exodus is a fact beyond dispute. As regards its causes, it would seem in the first instance that the phenomenon is due to the present agricultural situation, in so far as that the fall of the prices of agricultural products renders the occupation of the farmer far from remunerative. Years of bad harvests, such as that of 1926, when as has been seen the exodus reached an exceptionally high figure, add to the already severe difficulties of the farmers and give a further impulse to the movement towards the towns.

In present conditions the life of an industrial worker seems to have an attraction for the peasant, and that not only on account of the higher wages than those to be obtained in the villages. As a matter of fact industry is also going through a period of crisis, and the return on capital invested in the industrial enterprises in Esthonia is somewhat low. Wages of industrial labour are not much higher than those of agricultural labourers. In 1925, wages of agricultural labourers engaged for the year, with board and lodging, were one Esthonian crown per day (1 dollar = 3.72 Esthonian crowns); wages of job labourers in the country were on an average 1.95 crowns. In industry the daily wage did not exceed 2.23 crowns; this difference cannot, therefore, by itself be the explanation of the phenomenon of the exodus.

It would seem that apart from all motives of a purely economic order, there are other factors, the influence of which is perhaps no less important than that of the material factors. The war seems to have exercised a profound influence on the psychology of the dwellers in country districts, and the post-war generation does not appear to be so attached to the simple and isolated life of the country as were the former generation. Education too, the rapid development of which since the war has been among the most interesting of the social phenomena, is undoubtedly one of the important factors in the rural exodus. Although Esthonia is an agricultural country, where agricultural production is still three or four times larger than that of all the other industries taken together, the system of education has a decidedly urban tendency and the requirements of the country are not kept in view. Out of the credits appearing on the budget of education, a proportion amounting to 94.8 per cent. is divided among the primary schools, the high schools and the other institutions for general education, while only 5.2 per cent. falls to the share of the schools for vocational training in agriculture. General education is diffused in the villages, and many villagers who formerly had never thought of sending their children to high schools, do so now, and as these schools are usually situated in the towns, the young people lose the habit of rural life and are little inclined to return to the heavy work of the rural district.

The work of the farming class in Esthonia is still much heavier than it is in countries where the use of improved farm machinery is general. The farm equip-

ment of the Estonian peasant is still far from adequate to any real lightening of his labour. The following figures show that the number of the more important machines is small in Estonia :

	Absolute number	Number per 100 ha.	Number per farm
Tractors	646	0.38	0.03
Other motors	3,337		
Reapers.	10,205	1.00	0.077

Again, although agriculture is much the most important of the industries of Estonia, it receives only 43 to 44 per cent. of the loans made by the State to the different branches of the national economy, with the result that there are no funds with which to improve the situation as regards farm machinery. The want of capital and of credit is thus a very important contributory factor in the rural exodus.

The working day is also much longer in the country than in the town industries. In summer the working day in agriculture is on the average twelve hours, while in the town it is only eight hours.

The work of the woman is also especially heavy, as she must, in addition to her household cares, give the animals their feed, work in the garden, see to the poultry, etc., as well as help in the field work.

Thus in Estonia, a number of causes, material and psychological, serve to bring about a diminution in the rural population in favour of the towns, where the number of inhabitants is on the increase. In this sense, the existence of the problem of the rural exodus cannot be denied, but it may be asked, if in fact this phenomenon really gives rise to pessimistic forebodings, such as are entertained in certain other countries. From the point of view of a reasonable distribution of the population between town and country, alarm need hardly be felt, in view of the fact that after all about 70 per cent. of the Estonian people are still living in the country, and that agricultural production is much the most important in the national economy. Any misgivings should be directed to the inadequacy of the supply of labour for industry rather than to the depopulation of the country side.

In so far, however, as there does exist a rural exodus in the proper sense, not merely removing the annual surplus, but bringing about a steady decrease in the actual figure of the rural population, it would seem that a certain anxiety must attend the situation. In so far as the exodus is due to the world crisis in the agricultural industry, a fact which is in a large measure the explanation of the acceleration of the movement towards the towns, it seems very difficult to find a remedy, and it is only the return to more normal conditions on the market for farm products that can bring about improvement in the situation. As regards more general measures, the purpose of which is the checking of the rural exodus, mention may be made of the necessity for developing and improving railways and roads, the organisation of centres of social life in the villages, the development of co-operative organisations, as well as agricultural education and instruction. It is recognised to be essential to lay stress, in the primary schools, on the importance of agriculture, and to awaken in the scholars an interest in country life and pursuits. For those who have already passed through the primary schools, it is desirable to provide supplementary courses and evening schools, making it possible for them to acquire some knowledge of natural science, and in the general branches of sociology and agriculture. On the other hand, it would be desirable to take measures for ensuring that farmers could obtain farm machinery and in that way lighten their work, but unfortunately there are here great difficulties of a financial kind which for the time are insurmountable.

Country Women's Associations in Various Countries (*Continued*).

A Conference of Rural Women's organisations was recently held in Vienna under the auspices of the International Council of Women which held its VIIIth Quinquennial meeting in Vienna from 26 May to 6 June 1930. The object of the Conference was to discuss subjects of interest to country and farm women, and to consider whether organisations of rural women throughout the world can be brought into touch with one another on an international basis.

The Conference was attended by delegates and speakers from 26 countries (Austria, Australia, Bulgaria, Canada, China, Czechoslovakia, Denmark, England, Estonia, East Africa, Finland, Germany, Hungary, India, Ireland, Lithuania, Netherlands, Palestine, New Zealand, Norway, Scotland, Sweden, Switzerland, Union of South Africa, United States of America and Yugoslavia). Representatives were also present of the United States Department of Agriculture, Extension Service, the Ministry of Agriculture (England and Wales), the International Labour Office (Agricultural Section) and the International Institute of Agriculture.

The activities and objectives of the various national organisations of rural women necessarily differ somewhat in the different countries, in accordance partly with the existing status of women in the respective countries, partly with the conditions prevailing generally among the rural populations. In certain countries, the part played by women as agricultural producers is more definitely recognised, attention is given to the organisation of marketing facilities among country women, and to the stimulation by educational and competitive methods of the quantity and quality of their output in the special branches of farming usually regarded as within their sphere. In others, the organisations lay stress on the function of woman as the rural home maker and on her power to raise the general standard of living in the country. In some few quarters the rural women's organisations have given special attention to the position of rural women and their children in respect of the national legislation.

Very considerable interest attached to the item of the Conference agenda, "*Marketing problems as affecting country women*", the position in the United States and in Germany being described by expert speakers from the two countries.

In the United States of America marketing by women producers has until comparatively recently been carried on either as direct marketing to wholesale merchants in business centres, or sales to private customers, or by selling from wayside stalls, curb markets, etc. The disadvantages attending such forms of marketing, arising from lack of knowledge of consumers' wants, absence of standardisation, or defective business methods, are obvious, and difficult to correct in the case of the unorganised producer. There is however now a decided movement for the formation of Rural Women's Marketing Associations in the U.S.A., and these organisations will benefit by the funds now placed at the disposal of the Federal Farm Board which is to be utilised, inter alia, to promote marketing. The Associations are being locally organised and have premises of their own. Membership is growing, but there are still too few women who are members of an association. The United States Department of Agriculture assist these associations by the appointment of technical advisors in each district, whose sole function however is to suggest lines of policy or business methods. The actual organisation lies with the women themselves; membership is open only to those who can show that their products are up to standard, and in some cases a health certificate is required of intending members. The women study market demands, set standards of grading and packing of products, and above all study costs of production. Efforts are being made to stabilise prices and although obvious difficulties exist in this respect, there are indications that the farm woman will become an important factor in the education of public opinion

in the matter of the just and economic remuneration of the labour of the producer. The advance in knowledge of rural economics and sociology which is taking place is benefiting also the American farm woman who is undoubtedly gaining a wider outlook on marketing and other rural problems. It may be added that results of research as regards nutrition values of the various products are being placed at the disposal of these women's marketing associations with a view to encouraging the production and offering for sale of the commodities best calculated to build up the health of the nation. Other sources of information are open to the Associations, including the research departments of many large commercial firms and of the Farm and Garden Union of the United States, an offshoot of the older institution of the same name existing in England. American farm women undertake marketing frequently as a means of supplementing the income made by the man on the land, so as to have additional resources for bringing home life up to the desired standard for education and recreation.

In Germany farm women's marketing organisations have been in existence from pre-war years, owing to the efforts of the *Land/rauenvereine* which date from the early part of this century. They proved of great value during the period immediately following the inflation period, both in stabilising prices and in standardising products. Organised farm women's depots exist all over Germany and do much to encourage standardised types of products, breeds of fowls, improved kinds of fruit and vegetables, etc, and also the grading and classifying of products. As in the United States, use is made of all available sources of scientific and technical information. The recent introduction of "conjuncture price barometers" has been an aid to stabilisation. Above all the farmwomen's associations aim at elasticity in output in respect of absolute quantities and of the proportion of the various types of commodities, and also at expansion of markets.

Another subject of particular interest handled by the Conference was that of the *contribution made by women to agricultural output, as affected by agricultural education.*

It would no doubt be exceedingly difficult to determine with any exactness the proportion of the contribution made by women to the total volume of agricultural production, but it is probable that the extent of this contribution is not always fully appreciated. It is broadly true of all countries that the women of the farms, in addition to their duties as rural homemakers, have a large responsibility for the care of livestock (particularly young cattle and poultry), and that they also undertake field work, the extent of which varies according to the size of the holding, the prevailing type of agriculture and the customs and economic condition of a given country.

In any case, the utilisation of farm produce in the farmhouse, which forms an integral element in the profit earning capacity of the farm, must necessarily fall to the woman and should be reckoned as part of her contribution to the farm economy. In short the woman on the farm, however small is her share in the actual physical labour, cannot be said to be dissociated from the business of farming, in the way the wife of a business man, lawyer, or doctor, is often dissociated from her husband's profession.

Coming to the actual proportion of women engaged in farming, it was noted as of interest that in England and Wales, which is commonly regarded as an industrial rather than an agricultural country, according to the 1921 census agriculture comes third (after the textile and metal industries) as giving employment to women workers. The numbers being approximately 100,000 out of a total of about 800,000 agricultural workers. In addition the same census shows some 20,000 women farmers, out of an approximate total of 500,000 farmers (owners and tenants), while the figures representing the wives and daughters of farmers and small holders, and the women

farm servants, may be roughly stated as upwards of 1,000,000 persons, all making some contribution to agricultural output in the way of dairy work (1), poultry keeping and care of young stock. In regard to women farmers as such, it is becoming increasingly common for women with some capital and a liking for outdoor life and occupation to take up farming, and although many such farms are on a small scale, others are really large undertakings.

Vocational education in agriculture is, as is well known, now provided in all progressive countries and made available for women and girls. It may be said that the tendency of this vocational instruction and training on the output of farm women should be, and increasingly is, as follows :

1. an improvement in quantity and quality of output ;
2. an improvement in the status of the country women's work, raising it to the dignity of a career ;
3. more women are attracted to an agricultural life, whether on their own account or as paid workers ,
- 4) an improvement in rates of remuneration.

In addition the special form of agricultural education, known as rural domestic economy or farm household management, by making it possible to secure a better correlation between production of the farm and consumption in the farmhouse, is not only promoting better living in the country, but is enlarging the family income and virtually augmenting the agricultural output of the holding.

The fact that a technical training in agriculture is available for women equally with men is resulting in the gradual attainment by women of a place in the councils of the industry where their influence may be eventually felt in the direction of certain progressive measures, *e. g.*, the furtherance of co-operative movements in agriculture, improvement of rural housing and other conditions affecting the workers' efficiency, humane slaughtering of animals for food, etc.

The important question of *the rights of the rural woman and child in respect of the laws made for the whole community* was finally discussed. It was remarked that legislation is too often made with special regard to the requirements of the industrial worker and that the protection accorded by such laws is not applicable to the agricultural worker, and that the woman in particular is liable to suffer from the absence of such protection. Compensation for accidents during work for example is often unnecessarily difficult for a woman farm worker to obtain, no doubt partly owing to the less defined character of her activities. Also the laws as regards work before and after childbirth are not always sufficiently clear in respect to such workers. The inheritance laws are also often inequitable as regards women and it is more difficult in some countries for a woman to claim succession or inheritance rights than for a man. In regard to child labour there is frequently no legal restriction on the work of children in agriculture and they are often employed for long hours on heavy work, such as potato-lifting, which is really the work of full grown men. Attention was called to the fact that the International Labour Office is about to make an enquiry into child labour in all countries, and the work of this enquiry would be greatly helped and facilitated if the rural women's organisations in the various countries would undertake to collect facts relating to child labour.

The action of the Women's Institutes of Canada in regard to the promotion of the political and legal rights of rural women is particularly vigorous, although conditions vary considerably in the different provinces. Largely owing to the action

(1) By way of illustration of the value of the contribution it may be noted that one third of the total agricultural wealth of England and Wales is accounted for by dairy produce.

of women on public bodies, the legislation in the western provinces of Canada is of a very progressive character in this respect, rights of inheritance, of guardianship of children and similar rights of women being carefully protected.

Considerable emphasis was laid in the course of the Conference on *the betterment of the position of the woman farm worker*, and it was the general opinion expressed by speakers from a number of countries that the presence of women on local government bodies was among the most important means for effecting such improvement, while in addition technical improvements, such as the extension of electricity in rural districts and its application to farmhouse processes, would largely come about as a result of the part already taken, or to be taken, by women in public affairs.

It is above all essential that the woman in the country should learn to think for herself and should develop an effective sense of responsibility in all matters relating to her own life and that of the nation, and it is in this direction that the farm or country women's associations are doing some of their most important work.

* * *

It was agreed to continue an alliance of a somewhat informal character with the International Council of Women which would serve to link together the rural women's organisations which had been represented at this Conference and at the previous one held in London in 1929.

A recommendation was passed urging on the rural women's associations to promote everywhere the training of all girls in home science and the household arts. A second recommendation urged that in villages of such countries as do not possess legislation protecting child labour in agriculture information on child labour should be collected by the associations and forwarded to the International Labour Office at Geneva to be used in connection with the enquiry already mentioned. It was also recorded as the opinion of the Conference that the activities of the International Institute of Agriculture at Rome should include provision for consultation on and promotion of the interests of rural women. C. H.

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[A systematic exposition on modern lines of the farmer's economic problems and of the economic factors in rural social life, intended alike for the general reader, and as the text-book for students of agricultural economics. Prof. Yoder is throughout concerned with the present day situation of agriculture and does not hesitate to restate the older economic theories in the light of actuality. For example, he remarks of the accepted four factors of production, viz., land, capital, labour and management, that in the first place in the older agricultural countries it is impossible to press the distinction between improved land and farm capital, and secondly that the factors in agricultural production must include any factors influencing the wealth-getting of the farming class, such as land values, land tenure customs, farm insurance, credit, marketing systems, price cycles, organised farmers' movements, State promotion of agriculture, etc. All these factors are in turn subjected to a thorough analysis, some particularly striking chapters being those on land values, farm ownership v. tenancy in the U. S. A., social capital in farming, and price movements respectively. In the chapter on Farm Credit a very complete account is given of the working of the Federal Farm Loan and Federal Intermediate Credit systems. In his discussion of economic principles of land utilisation, Prof. Yoder expresses the opinion that in view of the preailing low prices of agricultural products very serious waste may be involved in State promotion of new land development projects, and he further urges that farmers, by continuing to re-invest any surplus in land or agricultural expansion, are themselves contributing to keep prices at an unremunerative level, whereas they would do better to improve their standard of living, spend more on education, etc. whereby farm life would be rendered more attractive, while prices would recover].

STAPLEDON R. G. . A Tour in Australia and New Zealand. Grass Land and other Studies Oxford University Press, London 1928, pp. 128.

[Although the objects of the tour undertaken by the author, who is Director of the Welsh Plant Breeding Station connected with University College, Aberystwyth, were mainly technical, there is much of economic interest in the account of his investigations. Grass land products form 56 per cent. of the primary production of Australia and nearly 60 per cent of Australian exports, while in New Zealand they equal nearly 75 per cent. of primary products and 94 per cent. of the whole export. Hence the immense importance of scientific grass land management in these new countries and Prof Stapledon's account of what has been achieved is graphic and complete. He notes also the place which is being given to sheep on the wheat belts of Australia. It is becoming increasingly difficult to make the single crop pay, and it is now generally accepted that a 900 acre wheat farm should carry a flock of about 400 sheep so as to convert to additional values, not only any tract of land included in the holding not suitable for wheat, but also all herbage appearing on the stubble fields or on the "bare" fallow of the usual Australian rotation. The volume contains a valuable appendix by Mr F L. McDougall of the Empire Marketing Board on the economic importance of Empire pastures]

STEWART, H R and KARTAR SINGH, S . Farm Accounts in the Punjab, 1927-1928 The Board of Economic Enquiry, Punjab, Rural Section Publications No. 20. Lahore, 1929

[The accounts presented in this publications are in continuation of similar accounts contained in three previous publications issued by the Board of Economic Enquiry, for 1924-25, 1925-26 and 1926-27 (Rural Section Publications, Nos. 12, 15 and 19) Of these one, that presenting the accounts for 1925-26, has already been summarised in this Review

The plan of the publication is to present in full detail the accounts of selected holdings of varying types of cultivation and tenure. In the year under review some of the accounts shewn refer to holdings where cultivation is partly dependent on rainfall and partly on wells, whereas previously these accounts were kept only on canal irrigated lands of the Punjab Canal Colonies. In contrast to the more normal conditions of the earlier years, in 1927-28 the wheat crop in the area was a failure and there was also local failure in the cotton crop. These facts are reflected in the gross returns in most cases, and net incomes per acre are consequently lower

A fact which emerges from the detailed results presented is the economic advantage of a relatively high labour bill. Out of the net incomes per acre reported in the year under review, the two highest referred, one to a large farm which is a Government estate and is cultivated on lines specially laid down by the Agricultural Department, the other to a 100 acre farm which has been under special observation for five years past. The former is cultivated by a number of tenants and the labour question does not enter, the other is under direct cultivation by the owner with hired labour. The labour cost is the largest single item of expenditure, the five year average per acre being a figure much higher than that of the same expenditure on any other farm under review, and in 1927-28 it amounted to 35 per cent of the total expenditure. It would seem that the improved and more varied system of cropping, including cotton, wheat, rape, sugarcane and vegetables, involved a better distribution of work throughout the year as well as a more satisfactory return for the owner]

SELIGMAN Prof Edwin R. A. The Economics of Farm Relief New York, Columbia University Press, 1929, pp 303 with bibliography

[This work is an examination of the present situation of the American farmer, and of its causes, whether transient or more deeply rooted, followed by a discussion of a programme of farm relief

The actual depression of agriculture is, as is well known, a world phenomenon. The fundamental causes, increased acreage, higher productivity, diminished demand and general economic changes are everywhere operative. The position is, in the view of the author, aggravated in the United States by the contrast with the prosperity during the War, and the fact that the American farmer expects to maintain a high standard of living, and to have "a full share in the material and spiritual possibilities of modern civilisation". As Prof. Seligman points out, the extent of land under cultivation in the States is about the same as that of the agricultural acreage of the whole of Europe, while the population is less than one-quarter of the European total. The status of the American farmer is thus initially higher, in comparison with that of the industrialist, than in the European countries, especially if it be added that it has not so far been necessary in the States to resort to the use of such low grade land as is found under cultivation in Europe.

The basis feature in the situation is the relation between population and food. The diminution in the rate of increase of population in nearly all civilised countries, together with certain alterations in some countries, notably the United States, in food habits involving a reduced consumption per capita, is met on the other side by an increased production owing, inter alia, to improvements in technique, mechanisation etc. A further contributory factor to this tendency to excess of supply over demand is the decline in purchasing power in European countries. The falling off of the European demand is of course largely due to the decline in purchasing power. In general the coriter is a strong advocate for international co-operation in all effort to influence world causes affecting agriculture, including the creation of a more stable money.

Coming to the domestic forces at work within the nation, the author shows by a careful analysis of the situation and of the economic characteristics of agriculture as compared with industry, that the chief difficulties of the farmer are due to excessive cos.s, uncertainty of returns and inadequacy of prices with general instability and inequality. Accordingly the programme of farm relief outlined includes the establishment of a Farm Board with the general function of price modification either indirectly or directly. The indirect influencing of prices might be effected by (a) elimination of risk, *viz.*, by encouragement of a nation wide system of calamity insurance with government reinsurance, and by (b) the decrease of submarginal production (or production which does not remunerate the grower while it increases the surplus), the Farm Board making extensive purchases of such submarginal lands for forestation. The direct influencing of prices is a question of lessening fluctuations by price stabilisation or by a more positive control.

Prof. Seligman considers that the use of all the recognised means of price stabilisation (obtaining advantageous freight rates, finding markets and securing more even distribution especially in times of glut, promotion of improved grading and standardisation) should precede attempts at definite price control which might be reserved for special emergencies. He indicates further the difficulty of introducing price control for a single staple crop without thereby encouraging a shift, say, from cotton or maize to wheat, and thus reintroducing the problem of the unmanageable surplus; tbe considers that the attempt to raise the domestic price above the foreign price is always liable to be frustrated by alterations in either demand or supply. As regards wheat, Prof. Seligman makes the apposite remark that the great variety of kinds of American wheat with varying suitability for export purposes would render particularly complicated the question of the proposed "equalisation fee", and also points out that as not enough of the hard red spring wheat preferred by millers is produced in the States the quantity now imported from Canada would undoubtedly increase if the domestic price were raised such increased supply again tending to restrict the rise. His general conclusion is that the primary work of the Farm Board should be stabilisation].

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AGRICULTURAL ECONOMICS AND SOCIOLOGY

LAND SYSTEMS

Agrarian Reform in Czechoslovakia.

The following is the first part of an article on the agrarian reform in Czechoslovakia, and is one of a series of similar studies which have already appeared in this Review. The author is M. Antonin Pavel, Ingenieur agronome, Ministerial Advisor to the State Land Office. The interest attaching to the article and to an agrarian reform of so striking a character and results need hardly be stressed. The earlier articles, on the agrarian reform in Finland, Lithuania, Latvia, Austria, and in Poland were published in Nos. 7, 8, 9, 10, 11, and 12 of 1929 and in Nos. 5 and 6 of 1930 of this Review.

I. CAUSES OF THE AGRARIAN REFORM.

1. *Economic Causes.* — The area of Czechoslovakia is 140,394 km², giving it the fourth place in this respect among the European States. At the present time the population is 14,611,000, or 103 inhabitants to the square kilometre. As regards density of population Czechoslovakia accordingly takes the seventh place, after Belgium, the Netherlands, Great Britain, Germany, Italy and Luxembourg. The western constituent countries of the Republic are highly industrialised and densely populated (128 persons per square kilometre); the eastern part is predominantly agricultural, there being from 48 to 61 inhabitants per square km. The percentage of the population engaged in agriculture, including forestry and fishing, is 39.6. The following figures indicate the occupation of the inhabitants in each of the countries making up the Czechoslovakian State; it will be seen that the agricultural character becomes more accentuated as one passes from west to east.

Class of occupations	Bohemia %	Moravia-Silesia %	Slovakia %	Sub-Carpathian Russia (or Ruthenia) %
Agriculture incl. forestry and fishing	29.7	35.2	60.6	67.6
Industry and trade	40.9	38.2	17.7	10.6
Other occupations	29.4	26.6	21.7	21.8

The total area of the State was distributed as follows in 1928 :

	Thousands of hectares	%
Arable land	5,992	43
Forests	4,648	33
Permanent grassland	1,372	10
Pasturage	1,151	8
Other types	255	2
Uncultivated and unproductive land . . .	618	4
	<hr/>	<hr/>
	14,036	100

The low percentage of unproductive land is a good indication of the high level attained by agriculture.

The conditions of landed property were formerly characterised by a marked predominance of large estates over medium sized and small holdings. According to the latest statistics of the former Austrian Empire relating to the ownership of the lands in the western countries of the present Czechoslovakian State (Bohemia, Moravia and Silesia) the percentage of very small holdings, those not exceeding 2 ha., was as high as 70.7 per cent. of all holdings, but the area of this size group only amounted to 6.4 per cent. of the total area of holdings. On the other hand, the percentage of holdings of more than 1000 ha. was only 0.03 per cent. of all holdings, but these estates covered more than 30.8 per cent. of the total area. (See Table below).

Size group — hectares	Number of holdings in absolute figures —	%	Absolute —	Area in ha %
0-2	1,049,457	70.76	503,309	6.49
2-5	176,826	11.92	560,855	7.23
5-20	198,457	13.38	2,098,768	27.04
20-50	51,813	3.49	1,449,353	18.67
50-100	4,181	0.28	276,924	3.57
100-1000	1,907	0.14	480,178	6.19
over 1000	401	0.03	2,391,219	30.81
	<hr/>	<hr/>	<hr/>	<hr/>
	1,483,042	100	7,760,606	100

For the Eastern territory of the State (Slovakia and Ruthenia) which up to 1918 formed part of Hungary, there are no reliable pre-war statistics in respect of landed property. Mr. Béla Kenéz (1), a Hungarian specialist, however states that

(1) "Die Agrarreform in Ungarn", by Dr. Béla Kenéz, Budapest. A study appearing in the body of a work entitled "Die agrarischen Umwälzungen in ausserussischen Osteuropa. Ein Sammelwerk herausgegeben und eingeleitet von Dr. M. Sering", Berlin und Leipzig, 1930.

the conditions of land-owning before the war throughout Hungary were very unfavourable, *i. e.*, there was a predominance of large farming and a large number of very small holdings. One-third of the whole country belonged to 4,000 large land owners. In consequence in the Eastern part of the present Czechoslovakian State, the agricultural population even more constitutes a proletariat than do those of the Western part.

This marked predominance of large farms of over 100 ha. was the more striking from the fact that a large percentage of this size group (60 per cent.) consisted of latifundia, *viz.*, of units of landed property of over 1000 hectares. In the western countries, 73 per cent. of the area of the large estates came under this description. The findings of history are (1) that this remarkable concentration of landed property in the Czech countries is not due to any organic evolution of the agrarian structure, but that it is mainly the result of the confiscation of the property of the Czech Protestant nobility by the Austrian Emperor Ferdinand between the years 1620 and 1635.

A large proportion of the latifundia is so held that the holders have merely the usufruct and are unable to sell or alienate any part of the property. The extensive property of the Catholic Church is also subject to legal limitations as regards its disposal. In addition, the owners of large estates not subject to any such restriction have not shown any desire to relieve the land hunger of the poorer agricultural population and of the small cultivators and to proceed to a voluntary parcelling, even if only partial, of their property. On the contrary the large farm shows a tendency to increase its area by the addition of adjacent parcels belonging to peasant ownership (2). As a consequence, it was the medium sized and small holdings which underwent parcelling rather than large estates, especially in the Eastern part of the State, where moreover the disastrous results of the traditional method of succession made itself felt (3).

In this way the proletarianisation of the agricultural classes continued and the economic and social contrasts became more accentuated.

Certain circumstances however have contributed to relieve the situation :

(a) The sudden and intensive development of industry in the Czech countries in the course of the last half century, which absorbed a part of the surplus population of the country districts and thus partially diminished the land hunger.

(b) A large proportion of the owners of the very small holdings with area not exceeding 2 hectares were unable to maintain a family on this small area and therefore took up a subsidiary occupation (artisan, factory worker, seasonal farm labourer) either in their own country or in a foreign country, and in this way the standard of life of that class rose to a certain limited extent.

(c) The predominance of the large agricultural and forestry undertaking was absolute, especially in many of the regions ; this type of property however represented only 31.7 per cent. of the intensive cultivation or agricultural land proper, while 67 per cent. of its area consisted of forests, pasturage, sheets of water, etc. On the other hand, 83 per cent. of the area of the small and medium sized holdings was under intensive cultivation. The agricultural proletariat and holders of small farms endeavoured to secure forest land belonging to the great estates, generally

(1) GINDLEY. Geschichte der Gegenreformation in Böhmen. Leipzig 1894.

(2) BUCHENBURGER A.: Agrarwesen und Agrarpolitik, Leipzig 1914. p. 321; PÄNTZ Dr. Anton V. Die Wiederbesiedlung in Oesterreich, quoted in the publication of Dr. Sering.

(3) On the influence of the family organisation on the agrarian structure of Central and Eastern Europe, cf. Sering, in his introductory article to the work quoted.

only in the mountainous regions with a view to forming pastures and also, though exceptionally, so as to round off their farms. The main pressure was directed towards the agricultural land of the great estates and that constituted, as has been already stated, only about one-third of the whole property of the large landowners.

(d) The large landowners rented a part of their agricultural land either in parcels to the poorer cultivators of the locality and to owners of small holdings or they leased whole farms, of an area of from 30 to 300 hectares, to tenants who were known to be of good standing financially and professionally.

In this way, although the large estate was not diminished as a unit of ownership a large part of its agricultural land was transferred, under the form of a tenancy, to cultivators of small or medium sized holdings, that is, actually to the agricultural proletariat. This striking development of tenancy in the Western part of the State was shown in the pre-war Austrian statistics for the Czech countries, as reproduced here :

Types of farm undertakings	Total number	0 2 ha	2 5 ha	5 20 ha	20 100 ha	more than 100 ha
1 Land belonging to the farmer	457,065	172,274	94,748	148,150	43,639	8,254
2 Land belonging to the farmer of the same area as or larger than the rented land	206,018	69,176	77,436	51,883	7,235	288
3 Land belonging to the farmer of less area than the rented land	155,028	106,013	40,135	8,003	692	185
4 No land other than rented	91,837	78,861	8,615	2,672	785	904
5 Land merely lent by employer	7,878	5,703	1,524	436	210	5

As will be seen, the undertakings which include only land belonging to the farmer form 49.8 per cent. only of all the farm undertakings of the Western countries of Czechoslovakia (Bohemia and Moravia Silesia). Others (about 40 per cent.) are of a mixed character : one part of the land is the property of the farmers, the other part has been obtained on lease. About ten per cent. of all the farm undertakings are merely rented. These data relate to all size groups of landed rural property, the greater proportion however of this rented land is naturally taken out of the agricultural land of the large estates. Dr. Jan Vozenílek, president of the State Land Office, states (1) that out of the 779,155 ha. of agricultural land of the large estates situated in the two Western countries, and coming under legislation of the agrarian reform, 339,757 hectares were rented in 1919, *i.e.* 43.6 per cent. of the total, or more than two-fifths of the agricultural land of the great estates. The same author calls attention later to the fact that the reasons for renting the land of the large estates were very varied, including : absenteeism of the landowner, want of working capital for direct farming, the troublesome and expensive farming of lands at a distance from the centre of other property of the large owner, advantageous offers on the part of tenants of substance. As regards the parcel renting for the farm labourers and for the small holders, the deciding factor was usually the necessity of ensuring in this way local labour for the seasonal work on the large estate, together with a possible desire to relieve the social tension.

(1) VOZENÍLEK Jan : Docteur-ingénieur, President of the State Land Office : Preliminary Results of the Czechoslovakian land reform. I. Bohemia and Moravia Silesia, Published in Czech with résumé in French. Prague 1930. The Peasant Printing Office.

In the Western part of Czechoslovakia this renting of land was on a money basis (*Zinspacht*), while in the Eastern part it was on a share tenancy (*Teilspacht*) basis or the rent was paid in kind, which is a form of payment peculiarly disadvantageous to the small peasant farmer.

Dr. Wiehen (1) has rightly said that "the considerable extension of tenancy in Czechoslovakian agriculture is particularly favourable to the application of land reform, as by the assignment to small cultivators of land rented by them for a long time past no change is made in the organisation of their holdings, and in consequence there is no disturbance of the production". It may be added that even the renting of entire farms is an advantage for the reform measures, since those tenants who farm them are in a position to incorporate these farms into their property and so ensure the continuity of the farming.

In any case, a great extent of rented land always indicates a serious land hunger which may well be reduced but can never be satisfied in a lasting way.] Tenancy is merely, from the economic and social point of view, a substitute for ownership and the tenant has always a tendency to become the owner of the land he rents.

It cannot be denied that the large farming enterprise has in the whole agricultural organisation of the State its economic and social function in which it cannot be replaced by any other category of enterprises. Accordingly both small and large undertakings must be represented in proportion to their importance. In the contemporary German studies on agriculture, it has rightly been observed that during the severe crisis in German agriculture the small farms showed more capacity for resistance than did the large farms. Any levelling, the aim of which would be to arrive at a single type of agricultural undertaking, would be a most disastrous form of radicalism. There should be a proper balance of small, medium-sized and large undertakings in the agricultural organisation of the State. Up to the beginning of the application of the agrarian reform in Czechoslovakia, there was no sound distribution of agricultural enterprises. Only since the reform has strengthening of family farming taken place, as a result of the disappearance of the predominance of the latifundia, a result which in itself does much to promote the reconstruction of agriculture.

The reform of agrarian organisation was advocated warmly in Czechoslovakia for economic reasons not only by the rural population but also by the town dwellers. The blockade of the Central Powers during the world war had proved clearly to the countries of Central Europe the importance of independence in agricultural production. It is for this reason that the consuming circles have given political support to the farmers in their advocacy of the agrarian reform from which an increase in agricultural production was expected.

Industry too has interest in increase of home consumption of manufactured goods, which depends on increase in the purchasing capacity of all classes of the population of the country. The consumption demands of hundreds of thousands of families of the agricultural labourers are undoubtedly too low. Hence even industry, which is endeavouring in the face of great difficulties to maintain its foreign markets, has an interest in the application of the reform from which it expects an expansion, at least partial, of the home market. The industrial worker can no longer look with indifference at the rural exodus which is concentrating in the towns and on the labour market generally a surplus of cheap labour, which may depress wages and thus threaten the standard of life of the workers in industry.

(1) WIEHEN Dr. J.: Die Bodenreform der tschechoslovakischen Republik, Berlin, Verlag für Sozialwissenschaft.

2. *Demographic Causes.* — The population of the western part of Czechoslovakia is somewhat dense (128 persons per square km.) owing partly to the marked economic development of this region and the intensive agricultural production, but in particular to the growth of export industries. During the last decades preceding the war the local labour supply was not adequate to the requirements of these industries and labour was attracted from the purely agricultural districts of the country. These *internal movements of population* were so considerable that in a whole series of districts purely agricultural the losses due to migration from one part of the country to another exceeded the local natural increase of population. The rural exodus was directed towards the towns and industrial centres, not merely in the region indicated but also in the other countries of the former monarchy. A striking example is the participation of the Czech lands in the growth of the population of Vienna, the former capital of the monarchy. According to the enquiry made by Dr. Fr. von Meinzingen it has been proved that at the time of the population census of 1900 out of 1,674,957 inhabitants of Vienna, 411,037 (or one-fourth) had been born in the Czech countries.

In addition there was a considerable *seasonal migration* (1), or periodical departure into other parts of Czechoslovakia, or even to foreign countries, for a certain time every year with a view to supplementary earnings. In 1913, for example, the number of persons so migrating in the Czech countries was 56,698, the migration being principally from the purely agricultural districts of Southern Bohemia. Even at the present time, Slovakia supplies yearly 61,000 seasonal agricultural workers, one-third of whom seek work in other countries (Austria, Germany and France).

None of these methods have provided sufficient outlet for the surplus agricultural labour which, owing to the agrarian organisation, could not find a place on the land that was held in the firm grip of the owners of the large estates. Hence from 1840 onwards extensive emigration to other countries of Europe or overseas took place from the Czechoslovakian countries and especially from the purely agricultural districts where latifundia prevailed. From 1840 to 1910 the number of persons who emigrated from the western countries of the present Czechoslovakia was 1,280,586. Between 1900 and 1913 the number emigrating from the territory of the present State of Czechoslovakia was 769,124. In consequence of the emigration which, especially in the eastern part of the State, had assumed really disastrous proportions, the number of adults had fallen so low before the war in certain departments, that the proportion of persons under 20 years of age was 50.7 per cent. in the Sarys region, and 48.3 per cent. in that of Trencin, about half the population thus consisting of children or minors. The average emigration from the present territorial area of the Republic was at the beginning of this century nearly 60,000 persons per annum, so that more than a third of the normal growth of the population was, in consequence of the unhealthy economic conditions, driven abroad at the productive age. As the percentage of re-immigration at that time was only 4.4, the result was a constant draining of the national forces. In the United States alone (2) the census of 1920 included 509,512 persons of Czechoslovakian nationality born in the territory now comprised in the Republic as well as 733,150 persons born in the United States, but of parents one of whom at least claimed Czech nationality. There were thus in the United States 1,242,662 inhabitants of Czechoslovakian origin, without counting those living in other overseas countries or in the other Euro-

(1) PAVEL Ant.: *Emigration and Land Reform (in Czech)* published in *Nase zahraničí* 1920, Prague.

(2) *Handbook of Statistics of the Czechoslovakian Republic*. 1930.

pean countries. The total number of Czechoslovakians living out of the country has been officially estimated at more than two million persons.

The causes of emigration or of losses of population in purely agricultural districts and in the whole State are complex and it is impossible to reduce them merely to the unsound state of the agrarian organisation. It is however remarkable that the districts most affected by emigration are the agricultural districts and among them especially those in which there is a proportion of large estates or a predominance of this type of property. It is besides a striking fact that before and after the war, the majority of the emigrants were members of the agricultural class (small-holders, their sons, or farm workers). The emigrants of the eastern part of Czechoslovakia belonged and still belong in the proportion of from 41 to 75 per cent. (according to district) to this class, which, in fact, represents 39.6 per cent. only of the population of the whole State. It is also a very striking fact that the eastern territory of Czechoslovakia, although much *less populated* than the western territory (only from 48 to 61 inhabitants per square km. as compared with 128) shows an emigration relatively *on a much larger scale* than the western territory.

In the course of the last few years, the proportion of emigrants per thousand of the total population has been for the western (or Czech) countries only 8, whereas in the eastern part of the State, it is 49. This affords confirmation of the "paradoxical overpopulation of the relatively less populated territories" which has been pointed out as a general phenomenon by Oppenheimer.

The existing correlation between these phenomena and the decay of the large landed property is confirmed also by rural economic conditions when it is noted that the number of persons earning their livelihood on a unit of land farmed by family farming is two or three times as large as that of such individuals on a unit of land belonging to a large estate.

*Number of persons employed in agriculture and forestry
per 100 hectares of agricultural land.*

Size Class of farms	2-5 ha.		5-20 ha.		20-100 ha		over 100 ha	
	absolute figures	%	absolute figures	%	absolute figures	%	absolute figures	%
Average for Bohemia :								
Members of family	65.8	96.2	25.5	79.1	46.1	11.9	0.4	1.7
Stewards/guardians	0.2	0.1	0.2	0.6	0.4	1.6	3.4	13.3
Servants/day labourers	2.5	3.7	6.5	20.3	13.5	52.3	20.4	85.0
Total . . .	68.5	100	32.2	100	25.8	100	24.2	100

The table taken from the work of Prof. V. Brdlik (1) is constructed from data collected by the *Institut de Comptabilité et d'Economie rurales* at Prague. It refers to the period 1909-1913 and from the demographic standpoint it confirms the great importance of the small and medium sized farm holding. Thus as a result of the diminution of the number and size of the great estates, accompanied by the simultaneous growth of the number and size of the small and medium sized farm undertakings, the possibility of a corresponding shrinkage in emigration may be regarded as not improbable.

(1) BRDLÍK Dr. VĚ. Conditions et résultats de la réforme foncière en Tchécoslovaquie. Contribution submitted to the XIVth International Congress of Agriculture, Bucarest 1929.

Emigration when it takes place from States with colonies of their own to which the surplus population can be directed is not accompanied by any dangers, for such emigration strengthens the power and the economic situation of the mother country in the colonies. On the other hand, the emigrants from continental States which do not possess colonies are threatened with loss of nationality in the second or third generation, especially in countries which have begun since the war to exercise a policy of restriction of the liberty of immigration. This problem is a burning one for the future development of the nation and it must be solved. In the popular imagination the latifundia were a sort of compensation for the absence of colonies, as offering a certain possibility of internal colonisation. A new and strong reason in favour of the agrarian reform is here obvious.

3. *Social and Political Causes.* — According to the 1921 census, the number of persons in Czechoslovakia belonging to the agricultural classes (including with agriculture also forestry and fishing) was 5,386,043, of which 2,423,901 were actively engaged in the occupation. Within this latter class, there is a group which deserves special attention — that of persons engaged in agriculture as a subsidiary occupation. These must be distinguished from other workers, as for instance from members of the farming family who assist in the production. The number of persons constituting this group in Czechoslovakia was 1,808,867, and for every thousand of such individuals, 1,618.2 members of their families were reckoned. (It is of interest to note that on every thousand persons undertaking transport work as a subsidiary occupation, 1,711 members of their families were reckoned, *i. e.*, a larger proportion than in agriculture).

Persons thus engaged in agriculture as a subsidiary occupation belonged, according to their place in the occupation as a whole, to the following classes :

	Absolute figures	%
Independent farmers	824,206	45.6
Tenants	10,772	0.6
Officials	17,583	1.0
Labourers	452,225	25.0
Apprentices	1,907	0.1
Job or day labourers	502,174	27.7
	<hr/> 1,808,867	<hr/> 100

From the small number of tenants it seems probable that there are included only persons who are farming rented land exclusively, and that many tenants are here reckoned among the numbers of the independent farmers. The wage earning element (the last four classes) thus cover nearly 53 per cent. of persons engaged in agriculture as a subsidiary occupation. The forest land of the latifundia naturally employs only a small quantity of permanent labour, and as 67 per cent. of the forest (non-agricultural) land is situated on the large estates of Czechoslovakia, the consequence is that on this land relatively fewer workers are employed than would be the case if the large estates included a greater proportion of agricultural land. It is however clear that the wage earning element forms a

very numerous group, without taking into account members of the farming families. According to the pre-war statistics of the Czech countries, the small farm holding (0 to 5 ha.) dispensed entirely with wages. The family of the farmer supplied on the holding 98.4 per cent. of all the labour, and only 1.6 per cent. fell to the wage-earning worker, this latter being of course the additional help required at harvest time. On medium sized holdings (5 to 20 ha.), the farmer's family supplied 79.8 per cent. of the necessary labour, while 20.2 per cent. was performed by the wage-earner. On the holding of from 20 to 100 hectares, the farmer's family only supplied 48.6 per cent. of the necessary labour and the wage bill now represented 51.4 per cent. of the labour. On the large undertakings of more than 100 hectares the wage-earners are represented by 98.1 per cent. while the share of the members of the family in the labour is confined to the organisation of the undertaking (1). In proportion as the size of the farm undertakings increases, so does the need for wage-earning assistance increase.

While in industry, under the present economic system, the wage-earning element is indispensable, agriculture has preserved to an important degree the character of a family undertaking. The larger the place taken by the large farm undertaking in the agricultural organisation, the more important does the wage-earning element become in comparison with the work of the independent farmer and his family. It is unnecessary to repeat here how great is the difference in quality and quantity between the work of an individual working on his own account and that of a workman. Charles Gide has proved that in paid work, the worker supplies as a rule the minimum of his work capacity, owing to his having no personal interest in the production. In Czechoslovakia it is becoming increasingly necessary for the farmer to devote energies to an intensive production with a view to supplying products of quality. The most careful performance of all agricultural work is essential. While scientific management of work, use of motor power, etc., do much to facilitate progress and to remove difficulties, the factor of human labour remains the deciding one. Accordingly the diminution of the number and extent of the large farming enterprises is equivalent to the diminution of paid labour and to the intensification of the work of the family of the independent farmer.

(To be continued)

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Present Situation of Consolidation Operations in Prussia.

Wherever a pronounced fragmentation of holdings occurs, consolidation is in most cases an indispensable preliminary for any progressive agricultural measures, and for that raising of the standard of rural life that accompanies progress of the kind. The Institute has accordingly followed with special interest the subject of consolidation and has repeatedly reported on the position in the different countries. The following report on the position in Prussia with respect to consolidation operations has been very courteously placed at the disposal of the Institute by the Prussian Ministry of Agriculture, Lands and Forests, as a reply to a questionnaire on the subject. The author of the Report is Dr. Brandt, Technical Advisor to the Ministry.

(1) VÍSKOVZKY Dr. La classe paysanne et la réforme agraire en Tchécoslovaquie. *Bulletin du Bureau International Agraire* V, VI, Prague, 1925.

I. OBJECTS OF CONSOLIDATION OR REPARCELLING.

Consolidation of holdings (*Grundstücksumlegung*), formerly known as *Auseinanderzsetzung*, *Zusammenlegung*, also *Flurbereinigung* or *Konsolidation*, originally served as a means of dividing land between landowners and peasant farmers, and also of effecting the division of communal land. By operations of this type in the course of last century there was brought about in the majority of the communes (*Gemarkungen*) of the Eastern provinces of Prussia a reorganisation of communal relations which even at the present time still answers the requirements of local agriculture. As time went on and the good results of consolidation became apparent, it came to assume an importance which was increasingly independent of any division of communal land. By the Consolidation order (*Umlegungsordnung*) of 21 September 1920, this process reached its climax. In accordance with this law, the parcels belonging to different owners in a commune which are either dispersed or are of uneconomic shape may be consolidated with a view to improved farming, if thereby any considerable improvement of cultivation is to be anticipated. Under similar conditions the "open fields", or lands belonging to whole villages (*Ortslage*), or a portion of such village lands, may be subjected to the same treatment.

The purpose of consolidation is clearly defined. The object is to improve cultivation by the creation of better conditions for farming, and also to remedy the defects in the land lay-out of the old rural communes. These defects may be characterised as follows :

In communes where reparcelling is necessary the settlement, in the most favourable case, lies surrounded by gardens and pastures in the middle of the commune. Communication with the neighbouring villages is rendered difficult by the nature of the exits from the village hemmed in by trees and hedges, allowing transit only in most cases by narrow irregular tracks too steep for vehicles. High roads are infrequent and only imperfectly open up the villages. On this inadequate network of tracks lie the irregularly distributed strips with their very small and uneconomically shaped parcels. The boundaries of the single parcels are imperfectly indicated. The great majority border on no kind of track and can only be reached by crossing other parcels. Similarly when cultivation is in progress it is only possible to turn the plough by going on to neighbouring parcels. In proportion to the small size of the parcels the boundary furrows occupy a large area and are frequently formed of balks and hedges. The irregular form and the small size of the parcels necessitate an exceptionally high expenditure in animal and human labour, seeds and fertilisers; the use of machines is scarcely possible and in any case not remunerative. The boundaries of the different crops overlap each other in a way which is not economic. Streams do not keep to any special course, but form swamps, as there is no system of drainage. The natural watercourses wind their way down to the valleys, and no proper river bed is formed. Hence it is impossible to get rid of the stagnant water so harmful to the growth of crops.

The waste water from the village, which is rich in fertilising substances, is not utilised for the watering of the pastures and even tends to reinforce the swampy conditions as insufficient care is taken in respect of draining off the surplus. Sites for cemeteries are frequently much too small. There are no sports or games grounds for the young people, nor any straying ground or common pasture ground for the cattle, or common gravel, sand or loam pits. The waste land, whether communal or other, lies uncultivated. The district boundaries are extremely irregular and sometimes cannot be ascertained, since they do not correspond with the boundaries

of private property, but frequently intersect the parcels of one or more properties. The villages are, for the most part, a tangle of houses, courtyards and gardens; and neither the roads nor the drainage systems are adequate to the needs. Especially in the level, the villages suffer from recurring floods and flood protection measures are essential. Building land is not available.

Coming to the single farms, the parcels belonging to each lie scattered over the whole commune (*Gemarkung*). It frequently happens that in mountainous regions a 10 hectare property includes more than 100 separately situated parcels, the average size of a parcel in such cases is only from 3 to 6 ares. Farming involves repeated journeys over the communal area with the farm implements, etc. on one and the same day. An immense amount of time is wasted that might be employed more profitably. The very imperfect marking of the boundaries leads to ploughing on the neighbour's land, and this with the rights of way and the damage so caused is a constant source of disputes.

The above outline will serve to indicate the main objects of the procedure for consolidation.

The first consideration is the introduction of hydraulic improvements by construction of the necessary trenching and by levelling and embanking of the existing water courses. A proper system of drainage is provided for. The site of the village is drained and protected against flood water by means of dykes or canalisation. Subterranean and other water likely to be harmful is diverted, areas affected by stagnant water are drained and the water which is capable of utilisation is applied to irrigation purposes.

Following on the regulation of the water system a new road network is developed intended to meet public requirements. By this means every section of the village land is rendered accessible by a main road which can be utilised at any time for transport of any kind of farm material, and in addition access to each separate parcel of land is arranged. The existing communication roads used for general traffic are graded, widened and altered so as provide better gradients, new roads are made as required and unnecessary roads done away with. In order to divert traffic from the narrow and tortuous village streets and to open up new building and garden land, zone roads and new village exits are made. Railway lines following the roads and level crossings are as far as possible done away with, and land is assigned for the new lines of communication which are contemplated. The result is the opening up of the consolidation area, and this achievement may be considered not merely as an appropriate utilisation of agricultural areas for the benefit of the landowners who took part in the procedure, but also as having a definite bearing on the importance of the general rural planning, which, while in process, is under the supervision of the chairman of the State Settlement Board (*Landkulturrat*) acting as police authority.

After attention has been given to the drainage, and the supply and discharge of water has been regulated, there follows redistribution of the parcels on the basis of connected schemes. The primary object of the consolidation operations is the abolition of the open field system (*Gemengelage*) and of parcels of uneconomic shape. The claims of the participants are settled at the time of the redistribution by means of land of equivalent value. The shares thus given in compensation must so far as possible be adjoining and must consist of parcels of land of similar type and quality to the land to be surrendered. Minor deviations are admissible and generally unavoidable. The position of the compensation lots is to be determined so as most to correspond to the advantage of all participants, taking every thing into consideration.

Special importance is attached to the economic demarcation of the separate

crops, in particular to the proper demarcation of woodland in relation to the land devoted to farming, and to the levelling of the district boundaries.

The following are regarded as undertakings of public utility: sport and athletic grounds, pasture grounds, bird sanctuaries, drying grounds for linen, quarries, gravel, sand and loam pits, cemeteries, etc.

The consolidation procedure must obviously include the establishment of precise legal relations as regards landed property. This is accomplished by means of the preparation of new maps of the communes and of rectification of the land survey and the Land Register, marking out of roads, dykes and parcels, in such a way that no further doubt is possible as regards the boundaries of property, ownership and rights of usufruct.

II. LEGAL REGULATION OF THE CONSOLIDATION.

Consolidation and the consolidation procedure are uniformly regulated for the whole territory of Prussia by the Law on consolidation of parcels (*Umlageungsordnung*) of 21 September 1920 — *Gesetzsammlung* S. 453 — and by the Law on the Land Settlement Authorities of 3 June 1919 — *Gesetzsamml.* S. 101. moreover the earlier reparaelling legislation (*Auseinandersetzungsgesetze*) of the 19th century, and numerous special regulations of a local character have remained in force (1).

The activity of the reparaelling authorities is concentrated in the local court of appeal attached to the Settlement Offices (*Kulturämter*). These offices cover one or more districts (*Landkreise*). They are under the direction of a head official acting on his own responsibility. In the provincial Court of Appeal the chairman of the State Settlement Board (*Landeskulturamt*) supervises the Settlement Offices, and he himself is directly under the Minister of Agriculture, Lands and Forests. At the present time there are in Prussia nine State Settlement Offices and about 100 subordinate Offices.

The decisions of the Settlement authorities, so far as they are not purely administrative, are taken by means of the so-called *Beschlussverfahren*. Disputes are decided in the first instance by the chief officer of the Settlement Office, as, e. g., disputes over valuation, compensation land or the completion of public utility enterprises which are being jointly carried out by plenipotentiaries elected by the participants. In the second instance the deciding authority is a court of arbitration set up at the headquarters of the State Settlement Board (*Landeskulturamt*), consisting of a director of the Land Settlement Court nominated as chairman by the Minister for Agriculture, Public Lands and Forests, and of six farmers. In the third and final instance the Higher Land Settlement Office in Berlin decides.

Consolidation procedure is divided into a preliminary process and the main process. The object of the former is to establish definitely whether consolidation is admissible, while the main process consists in the actual execution. For the preliminary stage the chairman of the State Settlement Board appoints a commissioner — usually the chief officer of the Settlement Board — to deal with the persons concerned. He is obliged to take such action, if the owners of one fourth of the parcels to be consolidated (reckoning according to size and to net return for purposes of assessment) make application for the appointment of such a commissioner. The chairman is also empowered *ex officio* to appoint a commissioner, if he considers that grounds

(1) They are systematically collected in the work by J. Peltzer entitled "Gesetz über Landeskulturbehörden vom 3 Juni 1919" (published Parey, Berlin, 1923, third edition).

for consolidation exist. The business of this commissioner is to meet, in some place to be determined, the persons interested and to take their opinions as to grounds for consolidation and the formation of a consolidation area. Opposition by either a simple or a legally determined majority may render the inception of the main process difficult or may prevent it. In the case of the consolidation of the open fields (*Ortslage*) of communes the majority must be in favour. After these negotiations with the persons interested or participants are concluded, arbitration court of the *Landeskulturamt* and at a later stage the *Oberlandeskulturamt* have to decide on the admissibility of the procedure together with the determination of the consolidation area.

The following are the stages in the main process :

1. Ascertainment of the existing rights in landed property (*Legitimations-führung*) ;
2. Valuation by experts of the landed property with approval of the results or the part of the participants. It is not a question of arriving at the actual value, but of determining the proportionate values of the separate kinds and classes of crops ; the process is not one of alienation, but merely of arranging an exchange of areas and it is therefore necessary to ascertain the proportionate value of the share of each participant in the whole consolidation area ;
3. Planning of the future road and dyke system ;
4. Survey, mapping and measuring of the consolidation area ;
5. Estimation of the value of the parcels of participants on the basis of the valuation results (see 2) ;
6. Reception of proposals ;
7. Elaboration of schemes ;
8. Approval and execution of the reparaclling. Objections are dealt with by means of the *Beschlussverfahren* procedure ;
9. Adjustment of the register for assessment of the land tax ;
10. Ratification or declaration by the participants of the due satisfaction of their claims by the consolidation process ;
11. Adjustment of the Land Register.

III. RESULTS UP TO THE PRESENT OF THE CONSOLIDATION.

1. *Consolidated areas.* The principal districts of consolidation in Prussia are the western provinces : Rhine Province, Westphalia, Hesse, Nassau, besides Saxony and in part Hanover. Consolidation has been effected in those provinces to the extent of 3 $\frac{1}{4}$ million hectares. There are still another 2 $\frac{3}{4}$ million hectares which require consolidation.

2. *Intensity of consolidation.* This differs very much in accordance with ownership and general territorial conditions as well as according to the kinds of soil. In many communes the proportion is only 2 : 1, in other localities, particularly in the regions where free succession is the rule and in consequence there is much splitting of property in land the proportion is sometimes 6 : 1, i. e., for six earlier farm parcels there is a single consolidated parcel. The frequently expressed apprehension that consolidation will be followed by fresh splitting of property is according to the latest researches unfounded. The ground for rejecting this supposition is to be found in the more scientific farming and in the purchase of pieces of property as they come on the market from the neighbours.

3. *Length of time occupied by the process.* The length of time required for the

consolidation process is usually governed by the size of the communes where the work is to done, and also by the natural difficulties of the ground and by questions of tenure. On an average in medium sized communes the time occupied from the commencement of work in the locality up to the moment at which the new plans come into force is from three to four years. The completion of the roads and dykes as a rule requires another two years.

4. *Costs.* The participants in a process of consolidation must as a rule themselves defray the costs, and that in proportion to the values of their respective rights. The costs include principally the outlay for measuring and supply of materials (stone, culvert piping, etc.), as well as that on the roads and dykes. Costs vary very considerably according to the character and lie of the ground. On the level they may be only 30 M. a hectare, while in mountain country where road construction is much dearer they are often over 200 M. a hectare. In this connection it must also be remembered that the return from mountain land is much less than from the fertile plains. In order to some extent to equalise this disproportion and to relieve the burden of the costs, subsidies are given by the State in conjunction with the provinces. These are graded in accordance with the needs of the participants and may amount generally speaking to one half of the total costs.

The costs connected with the engagement of officers amount at the present time to about 250 M. on an average per hectare. These are defrayed by the State. The land owners pay as a quid pro quo for the services rendered by the State a lump sum only which as a rule amounts to 12 M. per hectare, but according to circumstances may be lowered to 3 M. per hectare or raised to 27 M. per hectare.

The costs of the first operations in connection with the settlement plan alteration of the roads, demolition of balks, clearing work) fall on those participants on whose new holdings such operations are to be carried out. They may be set down at an estimated average of 24 M. per hectare.

Participants in a consolidation scheme have to furnish the actual land for the new roads and dykes in proportion to the value of their shares. The land required for other than agricultural purposes, *e. g.*, railways, main roads, cemeteries, etc., must be supplied by those whose interests are thereby served. The amount of the contribution in land varies between 4 and 10 per cent. of the former property, in this case also increasing with the extent of the splitting of the property or the mountainous character of the area of consolidation. This transfer of land does not as a rule result in a diminution of the cultivated area, as the loss is in most cases balanced, and sometimes more than compensated for, by an increase in agricultural land as the result of the abolition of rights of way, diminution in the size of the boundary furrows, filling up of sunken tracks, disappearance of hedges, balks and the like.

IV. EXPERIENCES OF CONSOLIDATION.

The State Settlement Boards (*Landeskulturbeförden*) have now been in existence for over 100 years. In this long time of activity experience has shown, almost without exception, that consolidation has had beneficial results in every respect. Consolidation puts an end to the innumerable disputes and litigation about boundaries, as the new boundary stones leave no doubt as to where the property begins and ends. The troublesome right of way over a neighbour's parcels is done away with, as each holding is accessible by a path. The few remaining servitudes which are still essential are clearly entered in the Land Register, so that no dispute can arise in respect of them. The burdensome compulsory cropping (*Flurzwang*) and the

three-field system are replaced with excellent results by a freedom of rotation, under which each farmer can make his own arrangements without reference to his neighbours. More space is assigned to forage crops. The head of live stock shows an increase, and with improved and larger supplies of manure higher crop yields will be obtained on the same or smaller areas. The control of weeds by means of the appropriate crop rotation and hoeing at the right time can only now be undertaken with any hope of success. The large newly formed holdings provide the right conditions for the employment of modern machines and for a remunerative pasture land farming.

A very considerable increase in the returns from landed property regularly follows on consolidation, which after detailed investigations in a number of localities may be reckoned on an average at least $33 \frac{1}{3}$ per cent. This shows that in areas requiring consolidation it would be possible thereby to increase the food of the population from their own soil by about one-third. On the other hand cultivation costs are reduced. The savings in farm implements, seeds and in human and animal labour may be reckoned on an average according to information received at 25 per cent. Since these savings occur predominantly at the time of highest requirements, *viz.*, at the period of cultivation and harvest, the effect for the farm is much more far-reaching than a mere calculation may show.

In addition to the importance of consolidation in augmenting agricultural production its significance for the improvement of forestry should not be overlooked. In the "open field" (*Gemengelage*) there are often found parcels of woodland of uneconomic shape and very small dimensions which cannot be exploited for forestry purposes at all. By consolidation large holdings come into the hands of a single owner and the basis of a remunerative forestry is thereby laid. The same is true of the grouping of pieces of waste land so far as these are suitable only for forestry purposes, and also of coppice in poor condition, the transformation of which into high forest is demanded by the requirements of modern forestry.

In conclusion the extremely important demographical and political significance of consolidation must be mentioned. In the communes which are not purely agricultural the occupiers of farms obtain their subsistence mainly from industry. Farming is only a subsidiary occupation. In so far as consolidation makes farming easier on these small holdings, ensures their continuance, checks the lapse into waste land, it acts as a check on rural depopulation and preserves the link with the soil and with Nature which is of so great an importance from the social and political standpoint as well as from that of the health of the nation.

V. CONSOLIDATION AND LAND IMPROVEMENT.

Land improvement work is almost always found in conjunction with consolidation work, in particular stream regulation, meadow improvement, drainage, bringing of waste land under cultivation and afforestation. These operations are necessarily so closely connected with consolidation as to make it impossible to separate them. Accordingly the distinction between reparaclling and soil improvement has been allowed to lapse for the whole of the Prussian State since the date of the Consolidation Order, while in clause 15 of the Order it is stated in general that dyking, drainage, and irrigation improvements are to be effected, so far as are required by the farming needs of the participants or by the general interest. As a result it frequently happens that co-operative societies for land improvement or irrigation are formed at the time, since all such land improvements can be much more econom-

ically executed during consolidation operations than apart from consolidation. Measures can be taken at such a time without reference to the former boundaries of the parcels, and can be so directed as to ensure best the attainment of the end proposed.

* * *

Summarising, consolidation may be looked upon as the most thorough type of land improvement, as one of the most important means of maintaining the peasant farming population and checking their migration to the large towns. The numerous applications for consolidation in recent years prove that the farmers, in spite of, or more probably because of, the present unfavourable agricultural situation look to consolidation as an indispensable preliminary to any improvement in their economic circumstances. Under present conditions it will still of course be several decades before the remainder of the work of consolidation is finally accomplished.

Agricultural Development in Nyasaland.

In an earlier number of this Review (1), some discussion was attempted of the extent and possibilities of agricultural development in Central and Eastern Africa, so far as related to three of the British mainland territories, Uganda, Kenya and Tanganyika. In a fourth, Nyasaland, the problem of such development is one of special difficulty, owing to the very imperfect communications linking this remote inland territory with any external markets or highway of commerce.

The land area of Nyasaland is a little under 40,000 square miles, but in shape it is a narrow strip of country running north and south between latitude 9° and 18° S., hardly more than 100 miles in width at its widest. The Lake which gives its name to the territory is about 360 miles long and from 15 to 50 miles wide and occupies the eastern part of the northern half of the country, the northern and north-eastern shores of the Lake being in fact in Tanganyika territory. No satisfactory communications, however, as yet exist by this natural waterway between the two territories, as this north-eastern shore possesses few good harbours, and the Tanganyika hinterland is mountainous and so far little developed. Communications between the Northwestern region of Nyasaland and the adjacent territory of Northern Rhodesia are also not yet developed, although a few tracks across the highlands that form the frontier are practicable. On the other hand Fort Jameson in Northern Rhodesia is connected by a good road and a mail car service with Blantyre, the commercial centre of Southern Nyasaland, the distance being about 250 miles. Fort Jameson, however, is situated in a region which is isolated from the rest of Northern Rhodesia by ravines impassable in the rainy season.

The natural outlet of the country is by the Shire River valley along which the waters of the Lake are drained southwards into Portuguese East African territory and so to the Zambesi River. A railway has been constructed following the line of the valley and connecting Blantyre, about 120 miles south of the Lake, with Chindio on the north bank of the Zambesi, whence goods and passengers are conveyed by ferry to the terminus of the Trans-Zambesia railway for Beira. Interruptions of the ferry are however frequent especially in the rainy season, and at no time can any large bulk consignments be handled, so that the construction of the Zambesi Bridge now agreed to by the Governments concerned is of paramount

(1) Development of the Agricultural Resources of the British Dependencies in Eastern, and Central Africa. *International Review of Agriculture*, Part II, October 1929.

importance to Nyasaland, as ensuring a satisfactory all-weather route to Beira. Any scheme for extension northwards of the Shire valley railway or for development of the natural highway formed by the Lake must await the completion of the Zambesi Bridge, as it is obviously useless to encourage activities which would result in an increase in the volume of traffic conveyed by what is at present a mere "bottle-neck" route, liable to blocking of the nature indicated.

There has been considerable advocacy of the project of constructing a railway connecting the northern end of the Lake with the Central Tanganyika line at Dodoma, a distance of about 400 miles with a watershed of some 2,900 feet to be crossed; and a preliminary survey for such an extension has in fact been made. The Tanganyika Government is however in favour of an alternative scheme for connecting Dodoma with Fife on the Northern Rhodesian boundary, while on the side of the Nyasaland Government the expenditure incurred over the building of the existing railway, and the commitments under the guarantee to the Trans-Zambia railway, constitute for the present strong reasons for perfecting the route through Portuguese territory rather than for giving support to a second enterprise. The linking of the two British territories is however probably only a matter of time, in view of the obvious advantages of bringing Nyasaland into direct communication with the port of Dar-es-Salaam. As an illustration of the comparative isolation of Nyasaland at the present time, it may be remarked that it takes nearly as long to reach Zomba, the administrative capital, from Nairobi or from Dar-es-Salaam, as it does to reach London from either of these latter.

In common with the three territories of Uganda, Kenya and Tanganyika, the proportion of European settlers is very small, the most recent figures being 1,716 in a native population of 1,290,885. The area alienated to non-natives is 6,268 square miles out of a total area of 39,964 square miles; of this an area of 4,300 square miles is held by the British South African Company in Northern Nyasaland. There is little land now available for further white settlement.

The problem of agricultural and economic development is accordingly largely that of encouraging and improving native agriculture, and of promotion of export crops within the limits, at least, of existing transport facilities.

A Report which has recently been published on the question of the formation in Nyasaland of a Native Agricultural Development Board well illustrates the progress that has taken place in the administrative conception of the methods to be followed for the achievement of such ends. A wider and more synthetic grasp of the problem has been attained in the course of experience here as elsewhere. Previously administrative efforts as regards agricultural development had been practically confined to a single commercial crop and to the instruction and encouragement of the native cultivator in respect to that alone. It is now being realised, as the prospect of improved transport facilities becomes clearer, that the problems of the advancement of agriculture in the Dependency must be treated as a whole, and that nothing short of the full co-operation of all departments concerned with rural development is required.

A historical sketch is given in the Report which may be summarised briefly.

At the time of the formation of the Nyasaland Department of Agriculture in 1909, efforts were mainly directed to the encouragement of cotton growing among Europeans and natives. No indigenous species of the cotton plant seems to occur in Nyasaland, but the crop had been introduced already, and the Director of Agriculture of that date had come from Egypt and was interested in methods of cotton growing. A European staff was placed in charge of two experimental farms with cotton as the main crop, itinerant work among native cotton growers was carried

out with the help of untrained native instructors,, and some attempt was made to regulate markets. Unfortunately this European staff was continually changing, and hence little sound local experience was acquired. The management of the markets was not entirely judicious, and the influence of external buyers brought about exaggerated price fluctuations which reacted upon native cultivation, making supplies very uncertain. More effective propaganda was undertaken after 1920, and an important step was the giving of the marketing monopoly in 1922 to the British Cotton Growing Association, which has resulted in a comparative stabilisation of prices and a steady improvement in the industry, although yields per unit of area are for climatic reasons not really high. It has in fact been found that other crops, especially tobacco and tea, can be grown with more advantage, and this fact is no doubt reflected in the recent decline in cotton growing by Europeans. For a number of years the areas under cotton cultivation by Europeans were considerable, varying from about 24,000 to 29,000 acres, but in 1928 the area planted in the crop was no more than 1,046 acres, and the total production by Europeans in that year is stated to have been only 50 tons of lint, or about 150 tons of seed cotton. On the other hand native cotton growing has shown steady increase, the figures of production of seed cotton being as follows :

	Tons		Tons
	—		—
Average 1909-1920	712	1925	2,909
1921	375	1926	2,197
1922	392	1927	1,387
1923	747	1928	2,486
1924	1,369		

With the development of the country, tobacco growing has become of importance. The crop is ready for picking, for the most part, before the heavy rainfall and soaking mists which prevail in Southern Nyasaland from April to August, and which on the other hand tend to interfere with the proper ripening of cotton. Other causes which have contributed to make the growing of tobacco an attractive enterprise are the increase in the world demand since the war, and the fact that tobacco is a product which owing to its high value in proportion to small bulk will bear heavy transport charges, such as are involved in the defective means of communication already described between Nyasaland and the outer world. The value in 1928 of the export of tobacco was £496,561 as compared with that of cotton at £58,264. At present the larger proportion of the crop is being grown by Europeans, the production on European estates in 1928 being over 4,000 tons. The figures for native production of tobacco in the five years 1924-1928 are as follows :

	Tons
	—
1924	525
1925	1,177
1926	2,023
1927	3,484
1928	2,414

In February 1926, a Native Tobacco Board was appointed charged with the duties of supervising and assisting native tobacco growers. The work of the supervisors has been concentrated on two important districts of the fertile belt lying to the south-west of the Lake and general instruction has been given in cultivation and curing, besides special directions as to the seed supply and correct pruning and topping. The record production in 1927 proved to be rather more than the local buyers could absorb, and much remained on hand while prices were lower than in 1926. The result was a reduction in the number of growers, the registered number in 1927 being 66,321 and in 1928, 34,761. In this way probably many natives who had been tempted by the high prices to embark upon tobacco growing without being the type likely to produce tobacco of good quality have fallen out, to the general advantage.

The market for tobacco is however always difficult owing to great and quite unpredictable variations in the demand for particular types, and it has become abundantly clear that the whole prosperity of Nyasaland cannot depend on a single commercial crop. Cultivation of tea and of sisal by Europeans are both markedly increasing, and to quote from the proceedings of a Conference of the Governors of the East African Dependencies in 1926 (1) "there is no case for prohibiting a native, just because he is a native, from growing any economic crop". Neither of these particular crops may prove suitable for native cultivation, but it is evident that the time has come for encouraging the development of native agriculture as a whole and with respect to any crops that the native can grow with safety and efficiency. Hence the Report earlier referred to recommends that it is desirable to form a Central Board composed of officials and non-officials interested in the native agricultural industry. It goes on to state that the questions confronting the Board include: (a) agricultural improvement, especially crop rotation, control of shifting or "fugitive" cultivation, etc.; (b) demonstration and propaganda; (c) agricultural education; (d) native water supplies; (e) animal husbandry; (f) afforestation; (g) transport and (h) marketing. As regards marketing the success of the tobacco markets organised under the Native Tobacco Board is noted, and the establishment of regulated markets for all produce is recommended, while it is of interest that the model proposed is that of the Berar markets in India. Under this system committees may be appointed to manage notified markets, and unauthorised markets prohibited. Rules are made to regulate the levy, collection and disposal of fees, conditions for issue of licences, etc.; inspection and correction, if need be, of scales and measures. The Report adds "We consider that the Protectorate of Nyasaland is on the eve of rural uplift and what is required is an organised and sustained effort by all those departments whose activities touch the lives and surroundings of the rural population. Without co-ordinated effort full advantage of the opportunities, which we believe will shortly be offering in the way of improved communications, will be lost. The demand for a better life by the native can be stimulated only by a deliberate and concerted effort to improve and develop native agriculture, and the closest and fullest co-operation of all Department concerned with rural development is essential".

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Report of the Commission on Closer Union of the Dependencies in Eastern and Central Africa. London, 1929.

(1) See Appendix VIII of the Report of the Commission on Closer Union of the Dependencies in Eastern and Central Africa. London, 1929, pp. 332-335.

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CREDIT

Development of Agricultural Credit in Uruguay.

Ordinary agricultural credit in Uruguay is effected through the Bank of the Republic and its branches, while land settlement credit is effected through the Mortgage Bank.

1. *Ordinary Agricultural Credit.* — From the Report of the Bank of the Republic relating to the financial year ended 31 December 1928, it appears that the outstanding investments up to that date for agricultural purposes were as follows : agricultural pledge, 895,734.64 pesos ; mortgage loans 359,712.16 pesos ; discount for agricultural credit, 410,424.30 pesos ; advances of seeds, 55,359.10 pesos.

The Report states that the Bank intends to adapt its operations increasingly so far as concerns conditions, period for repayment and interest due to lenders, to the economic character of the different forms of rural undertakings, taking account not only of the guarantees consisting of real property, but also of the moral liability, of the aspects and methods of work, and of the economic organisation of the debtor farms. With this object a technical inspection service of the Bank has been established which makes it possible to ascertain not merely the value of the guarantees of real property in pledge and of the mortgages effected by the clients, but, in general, all the conditions of organisation of the farms, which should be of interest to the Bank as giving the impulse to farm work and as constituting the moral and civil liability of the borrower.

The following loan departments are especially developed : small loans for the purchase of improved machinery, in cases where the advantages of using machinery are recognised ; small mortgage loans for the purpose of intensifying cultivation, fruit planting, installing and equipping dairies, or for purchases of animals for breeding ; loans on a guarantee of cereals deposited in warehouses authorised by the Bank. Personal credit is given more freely ; the conditions as to extent and duration of the loans are more varied in accordance with the information obtained on all points relating the personal *bona fides* of the client ; and also there is more elasticity as regards security given in the form of pledge, which is usually asked for only as a means of making certain that the funds applied for are actually used for agricultural purposes.

In connection with this new departure, the Bank has issued to all branch managers new instructions in regard to rural credit operations. These operations may be classed as follows :

1. Loans for the development of stock breeding ;

2. mortgage loans for the extension of agriculture, subdivision of estates, establishment of agricultural industries, cheap dwelling houses ;
 3. operations of agricultural pledge ;
 4. loans for the stocking of farms by means of purchases of breeding animals ;
 5. special loans for purchases at fairs or at auction sales in the event of selling up of farms ;
 6. special loans for the establishment of factories for agricultural industries ;
 7. special advance in seeds ;
 8. loans for the purchase of seeds ;
 9. loans for harvest expenses ;
 10. loans with guarantee of cereals in deposit ;
 11. loans for the purchase of machines on the basis of technical information and of the ascertainment of the possibilities of their advantageous utilisation ;
 12. loans for the purchase of equipment, apparatus for dairies and creameries, for the manufacture of preserved foods, etc. ;
 13. current accounts with dealers in agricultural machinery, so as to facilitate sales to farmers following on circulation of the agricultural pledge documents signed by purchasers ;
 14. small loans to small rural growers, to be granted to the branches of the Bank in the respective zones, the growers to be recommended by local farmers' associations ;
 15. loans to rural co-operative societies and unions. For each type of society the maximum sum, the maximum duration, the rate of interest and extent of guarantee are fixed. Usually the interest is 5 $\frac{1}{2}$ per cent., in some cases 6 per cent.
- By the instructions mentioned the branches were requested in advertising the loans to give preference to loans for extension and intensification of stock breeding, and to mortgage loans, up to 10 years in duration, for subdivision of estates.

Credit for Rural Improvement and Land Settlement. — The Mortgage Bank of Uruguay is authorised by the law of 20 June 1921 to make loans in bonds for the purchase of lands to be brought under cultivation, up to 85 per cent of the value of each parcel, or estate, in favour of future settlers who are purchasers. At the same time, the Land Settlement Committee was empowered under the same law to purchase in agreement with the Bank, lands to be divided and assigned to settlers ; thus functioning as an intermediary on behalf of the settlers. This law also fixes the special obligations attached to a loan, in the interest of the proper development of land settlement.

Among the conditions under which settlers may obtain loans are prominent naturally the limitations on the power of disposal of the parcel apart from consent of the Bank and the Land Settlement Committee within the first five years of the date of the loan ; except in the case of the extinction of the mortgage loan.

This law of 1921 (1) was completed by the law of 10 September 1923 which empowered the Government to issue a loan known as the loan for Rural Development and Land Settlement, for an amount of three millions of pesos (face value), at 6 per cent. interest, in addition to 1 per cent. of amortisation.

With this capital there was formed the Section for Rural Development and Land Settlement of the Mortgage Bank an independent Section, which has to pay in its liquid profits to the State Treasury, to provide for the service of the public debt registered in accordance with the law. Payment is limited to this purpose, with the

(1) See : *International Review of Agricultural Economics*, No. 12 of 1921. and *Idem*, No. 1, 1924.

proviso for the incorporation in the general budget account of the receipts in case of a deficit.

This independent Section purchases lands for reselling in parcels on special terms of contract to agricultural industries, or facilitates by loans the purchase of parcels; and when considered advantageous, it carries out agricultural pledge operations with purchasers. These latter pay in cash a minimum of five per cent. and for the balance due the Bank arranges mortgage loans in bonds, with the proviso of a supplementary loan in money, if the sale of the bonds does not realise the necessary sum.

The profits of the Section in these operations cannot exceed one per cent.

A new law, entitled Law for Agricultural Development, was enacted on 10 May 1929, for the purpose of increasing the capital of this Section by another two millions, by means of the issue of a loan. Until the bonds for these two million pesos are allotted, the Bank of the Republic will place to the current account of the Section a credit of one and a half million pesos to be invested in the purchase of lands for agricultural settlement.

The interest on this credit at 5 per cent. is guaranteed by the State in favour of the Bank of the Republic.

In execution of this new law, the loans, which will be granted in bonds by the Mortgage Bank, will correspond to 75 per cent. of the value of the sale of the estate or of any parcel.

The Section of the Bank will grant in money 25 per cent. more than the loss on the sale of the bonds, up to the point of covering the value of the sale of each parcel, or estate, in the form of a second mortgage loan. For this loan not more than 6 per cent. in interest and one per cent. amortisation will be asked.

The Board of Directors of the Bank can extend the benefits of this law to the 12 existing agricultural colonies, administered by the Bank; these were established in virtue of the special laws of 22 June 1913, 20 June 1921, and 10 September 1923, and include 850 farming families on an area of 39,741 hectares. The parcels bought through the Section are exempt for 10 years from the land tax, provided they are cultivated for half at least their area; they are also not subject to forced sale nor to sequestration for debts of the purchasers, during the first six years of possession. The debts arising out of the loan given by the Bank form an exception.

After three years definitive title to any parcel or holding will be given. During that period the land will be held on the title of a cultivating lease. At the end of three years, the settler must prove to the satisfaction of the Bank Directors, that he possesses the necessary qualifications, technical and personal, for full title.

If the settler is judged to be unsuitable for definitive title, he must leave the farm within a maximum period of thirty days from the date of the notice served on him. If the output of work of the settler on the rent purchase system seems to the inspectors of the Bank very markedly deficient or if he seems unsuitable personally, then an ejection order can be given even during the three year period with 90 days notice.

In accordance with this new law, the Government will expropriate lands intended for settlement, if applied for by the Board of Directors of the Mortgage Bank for the purpose. However the Bank will endeavour in the ordinary way to purchase the lands by amicable agreement with the owners, whenever the price does not exceed by more than 20 per cent. the value of the property fixed for the purposes of the land tax.

In the regulations for the application of the law of 10 May 1929 it is established

that in the assignment of the lands purchased or expropriated and divided into parcels, preference shall be give to Uruguayan farmers who are heads of families, enjoy good health and can produce references attesting of good character and habits.

E. F.

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CO-OPERATION

A New Impulse to Co-operation in Spain.

For more than half century certain Spanish economists have been working to diffuse and promote co-operation in Spain, as a rule working separately or in small groups. This isolated action has found concrete expression, thanks to the efforts of the indefatigable propagandist, Señor Gascón y Miramón, in an Institute of Co-operation and Social Activities, known as "Ponos". This institute which in its origin was wholly Spanish will be converted into a Spanish-American Institute so soon as the idea takes root in Portugal and the South American countries.

The Co-operative Institute *Ponos* was formed in March 1930 within the terms of the Spanish Law on Associations of 1887. The objects of the association are :

(a) To study and to facilitate the study of problems relating to co-operation, insurance and social activities.

(b) To make itself known by all possible means.

(c) To ensure that instruction in co-operation and in allied subjects be given in all official centres of instruction, and to establish, on its own account or conjointly with other bodies, schools for the training of staff for service in or direction of co-operative societies or institutions having a social object.

(d) To promote the formation of co-operative societies.

(e) To provide in the case of societies already established advice and assistance in respect of technical difficulties or difficulties of organisation.

(f) To promote and to organise, either on its own account or conjointly with other elements, exhibitions, competitions, congresses and other manifestations with a view to making known the work accomplished, providing stimulus, discussing present day problems of special interest and indicating lines of work.

(g) To maintain constant communication with the large co-operative organisations and kindred bodies all over the world so as to be in a position to effect, when required, the speedy linking of the Spanish associations or federations with those in foreign countries.

The Association will remain entirely apart from all combinations formed with a view to money making, and is also aloof from all party spirit.

The Association consists of patron and benefactor organisations, affiliated organisations, and of titular members, associate members and honorary members, all in limited numbers. Patron organisations include the official centres, corporations and organisations of any class which give their support to the Association towards the discharge of its financial liabilities to the extent of an annual subsidy of at least three thousand pesetas. Organisations are considered as benefactor organisations which make an annual contribution, the amount fixed by themselves, but not less than one hundred pesetas. The affiliated organisations consist of the co-operative and insurance societies which apply for admission, take part in the regular work of the Association and make an annual contribution of a corresponding amount. The affiliated and the benefactor organisations will be represented in the general meeting of the Association by a delegate, the patron organisations by four delegates in the general meeting and by one delegate on the Council.

Titular members will be founders and persons who, on account of their activities in connection with the work of the Association, are proposed by three titular members and admitted by the appropriate Committee. Titular members are under an obligation to collaborate personally in the work of the Association. As associate members are considered those who apply for admission to the Association, declaring their conformity with its objects and its constitution, and who pay the annual contribution as fixed. Persons who have contributed by eminent services to the advancement of the objects of *Ponos* will be considered as honorary members.

As funds of the Association *Ponos* there will be reckoned annual contributions and other payments made by its members and by the affiliated and patron organisations; donations, bequests and subsidies of the State, Corporations, organisations or private persons; also rents, interest on or products of its own property and any other resources of a legitimate kind which are not inconsistent with the nature and character of the Association.

Ponos is regulated by the laws, its statutes and the decisions of the general meeting, and is governed and administered by the Council and management committee, with the assistance of the sections and delegations. The management committee consists of a chairman, two vice-chairmen, a treasurer, an assistant treasurer, a general secretary, an assistant secretary and five members, directly elected by the members and by delegates of organisations with right of voting in the general meeting. The Council is formed of the chairmen of the sections and delegations or their deputies, delegates representing the titular members, and the honorary members.

The functions of this Committee include the proper interpretation and carrying into effect of the statutes, the administration of the property of the Association, the appointment and dismissal of the staff and the decision on all matters where delay in decision until the general meeting would be prejudicial to the general interests of the Association.

The powers of the Council include the financing of the work of the Management Committee, the approval of the rules for internal administration, and the giving of advice on contracts, schemes of work and estimates of new undertakings in respect of which a sum exceeding six thousand pesetas is estimated.

The Management Committee and the Council will be re-elected yearly, and the members of either are eligible for re-election.

The Association will be grouped in the following Sections: 1. Instruction and General Questions; 2. Co-operative societies of producers; 3. Agricultural and Stock-breeding and Forestry Co-operative Societies; 4. Co-operative credit societies; 5. Thrift and social charges; 6. Women's Section.

In view of the impulse that has been given to the institution from its inauguration and to the character of the members who have from the first associated themselves with it, is to be anticipated that within a short time there will be results that will be felt in the improved organisation of co-operation in Spain.

F. M. B.

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[Taking as basis the principles of the "Carta del Lavoro", the author brings out clearly the nature and most salient characteristics of the corporative economy, showing the sharp differentiation with the liberal economy. This latter denies the existence of a "national economy" with its personality, distinct from that of individuals and groups, while the corporative economy proclaims as fundamental truth the unity, including the economic unity, of the Nation. The hedonistic assumption that the end is the achievement of individual satisfaction is rejected, and the corporative economy recognises and gives full value to the social and moral movements which occur also in the economic sphere, and proclaims the predominance of the collective and national interest over that of the individual. With this conception as guiding principle, the author explains how we are to understand, in the corporative economy, the economic initiative, the cost of production, profit, returns, wages, etc., a clear and complete illustration of the system being thereby presented. The work is thus an indispensable commentary on the "Carta del Lavoro"].

COMISH N. H. *Cooperative Marketing of Agricultural Products*. New York and London : D. Appleton and Co. 1929. \$3.50.

[At a time when economists seem to be taking a special interest in the co-operative side of the trade in agricultural products, this volume will be of interest to all those who wish to have an idea of what has been done in this respect in the United States and of what still remains to be done.

One-third of the farmers of the United States are members of some co-operative society, but this proportion might be considerably increased.

Operations in respect to citrus fruit, dried fruits, milk, cotton, tobacco, poultry, cereals, wool, live stock are respectively passed in review.

The second chapter deals with the general problems and with legislation relating to co-operative societies in the United States.

The third chapter is a history of the great agrarian movements in this country. Brief accounts are given of the Grange, the Alliance, the Society of Equity, the Farmers' Union, the Farm Bureau Federation, the Non-Partisan League.

Chapter IV is a study of the conditions which must be fulfilled by a co-operative society if it is to be prosperous and if its turnover is to increase.

In regard to these movements it is of importance to retain the critical attitude as under the influence of enthusiasm it is possible to pay insufficient attention to the moral and technical qualifications of persons who are called upon to undertake the direction of the interests of the community.

There are some interesting remarks, based on personal experience, on the subject of publicity].

SANTI Floridia : *Geografia della produzione e del commercio*. Third edition. Naples, Casella, 1929.

[A comprehensive treatment of economic and commercial geography. The first part contains the statement of the main scientific principles upon which the study of geography is based. These are distinguished by the author as mathematical, astronomical, physical, biological, anthropological, and finally the general principles of economics. Special interest attached to the chapter relating to production in which are passed under review agriculture, sylviculture, hunting and shooting, stockbreeding, fishing and care of waters. A further subject is international trade and the main currents of world exchange of products. In the second part, which is devoted to the European countries, special attention is paid to Italy and a study is made of the natural conditions, the basic productive activities, trade, transport and communications, etc.].

AGRICULTURAL LEGISLATION

The New Tariff Legislation in the United States.

On June 17 of this year President Hoover affixed his signature to a bill the objects of which are described in its preamble as *inter alia* "to provide revenue, to regulate commerce with foreign countries, to encourage the industries of the United States, to protect American labour". The means by which these purposes are to be achieved may be gathered from the short title of the Act — the "Tariff Act of 1930". Its effect according to the U. S. Tariff Commission is to increase the average rate upon agricultural raw materials by 38.10 % to 48.92 %, and that upon dutiable articles of strictly other than agricultural origin, by 31.02 % to 34.31 %. According to the same authority out of the total of about 3,300 articles on which duties are payable, 890 will, as a result of the Act, pay a higher duty while in the case of 235 articles the duty has been decreased.

The reasons which prompted this important revision of the United States Tariff are made clear by a statement made by President Hoover on June 15, 1930 announcing his intention to sign the bill. While refusing to assume that the "rate structure in this or any other tariff bill is perfect", the President at the same time expressed the opinion that "the bill gives protection to agriculture for the market of its products and to several industries in need of such protection for the wage of their labor". The President reminded the nation that the bill was "undertaken as the result of pledges given by the Republican Party previous to its return to power". This declaration, the President continued, had included the following passage: — "The Republican Party believes that the home market, built up under the protective policy, belongs to the American farmer, and it pledges its support of legislation which will give this market to him to the full extent of his ability to supply it. . . ."

"There are certain industries which cannot now successfully compete with foreign producers because of lower foreign wages and a lower cost of living abroad, and we pledge the next Republican Congress to an examination, and, where necessary, a revision of these schedules to the end that the American labor in these industries may again command the home market, may maintain its standard of living and may count upon steady employment in its accustomed field". The intimate connection between the proposal for a tariff revision on the one hand, and the agricultural crisis on the other, is made still clearer by the fact that the tariff bill was coupled with the proposal for a Federal Farm Board as being one of the two main legislative tasks for which a special session of Congress was called on April 15, 1929. This was made evident in the message which the new President addressed to the Senate and the House of Representatives on the opening of the session. Speaking of the "difficulties of the agricultural industry" President Hoover declared that "some of the forces working to the detriment of agriculture can be greatly mitigated... by readjustment of the tariff". Viewed in this historical perspective the Tariff Act now under consideration falls naturally into its place as an aspect of the recent movement in the United States for the relief of the American farmer — a movement which has formed the subject of previous studies in the present Review (1).

(1) See *International Review of Agriculture*, Part II, Year 20, No. 6 (June 1929), p. 249 and Year 21, No. 3 (March 1930), p. 110.

The theory by which a higher tariff is an instrument for mitigating agricultural depression was amplified by President Hoover in the course of the same message in the following terms: "An effective tariff upon agricultural products that will compensate the farmer's higher costs and higher standards of living, has a dual purpose. Such a tariff not only protects the farmer in our domestic market, but it also stimulates him to diversify his crops and to grow products that he could not otherwise produce, and thus lessens his dependence upon exports to foreign markets. The great expansion of production abroad under the conditions I have mentioned renders foreign competition in our export markets increasingly serious. It seems but natural therefore that the American farmer, having been greatly handicapped in his foreign market by such competition from the younger expanding countries, should ask that foreign access to our domestic market should be regulated by taking into account the differences in our costs of production".

That the soundness of this theory and the means proposed for its application in practice were not entirely accepted by the whole body of American opinion may be seen not only from the final voting on the bill but also from the history of its passage through the various stages and the strong opposition raised against it both in the two Houses and outside. In the Senate the bill was passed by a majority of 2 votes only — the voting being 44 in favour and 42 against, while in the House it secured a majority of 69 votes — 222 members voting in its favour and 153 against. It was confidently anticipated in some quarters that President Hoover would even exercise his right of veto and thus adopt a course which had been strongly urged upon him by prominent spokesmen of the business and financial world. Thus, to quote only a few expressions of hostile opinion, the American Importers and Exporters' Association on June 5 addressed a telegram to President Hoover giving it as their opinion that the bill "while bringing no real benefit to our farmers and manufacturers and bringing real harm to our consumers in this country . . . has caused and will continue to cause ill-will and reprisals which will make it impossible for us to develop the export-trade necessary to the continued prosperity of the United States". The Textile Converters' Association, again, in a lengthy list of objections (May 29) affirmed the bill would "increase the cost of living to the average citizen, particularly the farmer and that while causing retaliation on the part of foreign countries it would not aid the farmer as his problem is not that of foreign competition in the domestic market but is the problem of the disposal of surplus crops".

Still more striking, perhaps, was the petition laid before Congress on May 5 asking that the "new tariff rates be denied passage by Congress, or if passed, be vetoed by the President". The petition was signed by 1,028 economic experts and business men, while among its promoters were the professors of economics of the University of Chicago, Yale, Princeton, Pennsylvania, Columbia and Harvard. The signatories included 280 members of the economic staffs of the sixteen leading Universities. The petition objected that a "higher level of duties would raise the cost of living and injure the great majority of citizens". Not only would those persons who do not produce articles protected by the tariff be losers, but "the vast majority of farmers would also lose because, having no competitors in the home market for their basic products they would not benefit from any tariff which is imposed upon the basic commodities which they produce". On the other hand "they would lose through the increased duties on manufactured goods". Further the petitioners did "not believe that American manufacturers in general need higher tariffs" and gave it as their opinion that further barriers would do not good but harm.

"Finally" the statement read "we would urge our Government to consider the

bitterness which a policy of higher tariffs would inevitably inject into our international relations. The U.S. was ably represented at the World Economic Conference which was held under the auspices of the League of Nations. This Conference adopted a resolution announcing that the time has come to put an end to the increase in tariffs and to move in the opposite direction. The higher duties proposed in our pending legislation violate the spirit of this agreement and plainly invite other countries to compete with us in raising further barriers to trade. A tariff war does not furnish good soil for the growth of world peace".

President Hoover did not, however consider that this opposition would justify his vetoing the bill and while admitting that the "rate structure" established was not perfect, he was of opinion that "the disposal of the whole question is urgent". The bill had, he said "been under almost continuous consideration by Congress for nearly 15 months". Hence it was "urgent that the uncertainties in the business world which have been added to by the long extended debate of the measure should be ended". This, the President added, could only be done "by completion of the bill". The bill was therefore signed by the President on 17 June and in pursuance of the stipulation contained in it that "except as otherwise provided this act shall take effect on the day following the date of its enactment" the new rates became operative at midnight the same day.

It is clear from President Hoover's statement of 15 June that he was able to sign the tariff bill with the greater confidence inasmuch as the new rates (1) were modifiable in virtue of a special machinery provided by the Bill itself. This was the so-called "flexible provision" or the power given to the President of the United States on the recommendation of the Tariff Commission to modify, within certain limits, the tariffs as laid down. The Tariff Commission, it should be noted, was in existence previously, having been set up by the Tariff Act of 1922. The attempts made during the recent debates for its revision, principally in the direction of reducing the President's powers, were unsuccessful and the constitution of the Commission hence presents very little differences from that elaborated under the provisions of the Act of 1922. It is composed of six Commissioners (sec. 330) appointed by the President by and with the advice and consent of the Senate. After making the necessary provisions as regards competence, the Act provides that "not more than three of the Commissioners shall be members of the same political party". Fur-

(1) The following list gives the tariff on a few representative agricultural products as fixed under the Tariff Act of 1922 and the Tariff Act of 1930 :

Product	1922 Tariff	1930 Tariff
Cattle.	1 ½ cents per pound	2 ½ cents per pound
Fresh beef and veal	3 cents per pound	6 cents per pound
Sheep and goats	2 \$ per head	3 \$ per head
Milk.	2 ½ cents per gallon	6 ½ cents per gallon
Cream	20 cents per gallon	56 ⁶ / ₃₁ cents per gallon
Butter	8 cents per pound	14 cents per pound
Eggs	8 cents per dozen	10 cents per dozen
Corn	15 cents per bushel	25 cents per bushel
Barley	20 cents per bushel	25 cents per bushel
Wheat	30 cents per bushel	42 cents per bushel

ther, "in making appointments, members of different political parties shall be appointed alternately as nearly as may be practicable". Under sec. 332 the Commission is to have the widest powers to "investigate the operation of customs laws, including their relation to the Federal revenues, their effect upon the industries and labor of the country, and to submit reports of its investigations as hereafter provided". Further the Commission is empowered to "investigate the tariff relations between the United States and foreign countries, commercial treaties, preferential provisions, economic alliances, the effect of export bounties and preferential transportation rates, the volume of importations compared with domestic production and consumption, and conditions, causes, and effects relating to competition of foreign industries with those of the United States, including dumping and cost of production". The Commission is directed to place all information at its command at the disposal of the President of the United States, the Committee on Ways and Means of the House of Representatives and the Committee on Finance of the Senate. One of the most important duties of the Commission however is (sec. 336) to "investigate the differences in the costs of production of any domestic article and of any like or similar foreign article". It is then laid down that "if the Commission finds it shown by the investigation that the duties expressly fixed by statute do not equalize the differences in the costs of production of the domestic article and the like or similar foreign article when produced in the principal competing country, the commission shall specify in its report" (to the President) "such increases or decreases in rates of duty expressly fixed by statute (including any necessary change in classification) as it finds shown by the investigation to be necessary to equalize such differences. In no case shall the total increase or decrease of such rates of duty exceed 50 per centum of the rates expressly fixed by statute". In the event of this procedure being insufficient the Commission shall specify in its report "such ad valorem rates of duty based upon the American selling price . . . of the domestic article as it finds shown by the investigation to be necessary to equalize such differences. In no case shall the total decrease of such rates of duty exceed 50 per centum of the rates expressly fixed by statute, and no such rate shall be increased". These recommendations will come into force by a proclamation of the President if in his judgment such rates of duty and changes are necessary to equalize the difference in costs of production.

Supporters of the new tariff claim that a great deal of criticism brought against it has overlooked the part played in the scheme by this Tariff Commission. With its extensive apparatus for the study of the economic effects of the new rates and its wide powers for the recommendation of necessary changes, the Commission, if made to function properly, will undoubtedly prove a delicate and powerful instrument for adapting an admittedly flexible and experimental protectionist tariff to the fluctuating conditions of the international market.

* * *

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INTERNATIONAL REVIEW OF AGRICULTURE

PART II

MONTHLY BULLETIN

OF

AGRICULTURAL ECONOMICS AND SOCIOLOGY

LAND SYSTEMS

Agrarian Reform in Czechoslovakia.

The first part of an article on the agrarian reform in Czechoslovakia, by M. Antonin Pavel, Ministerial Advisor to the State Land Office at Prague, was published in the August issue of this Review. The publication of the second part has been unavoidably postponed.

FARM ECONOMICS

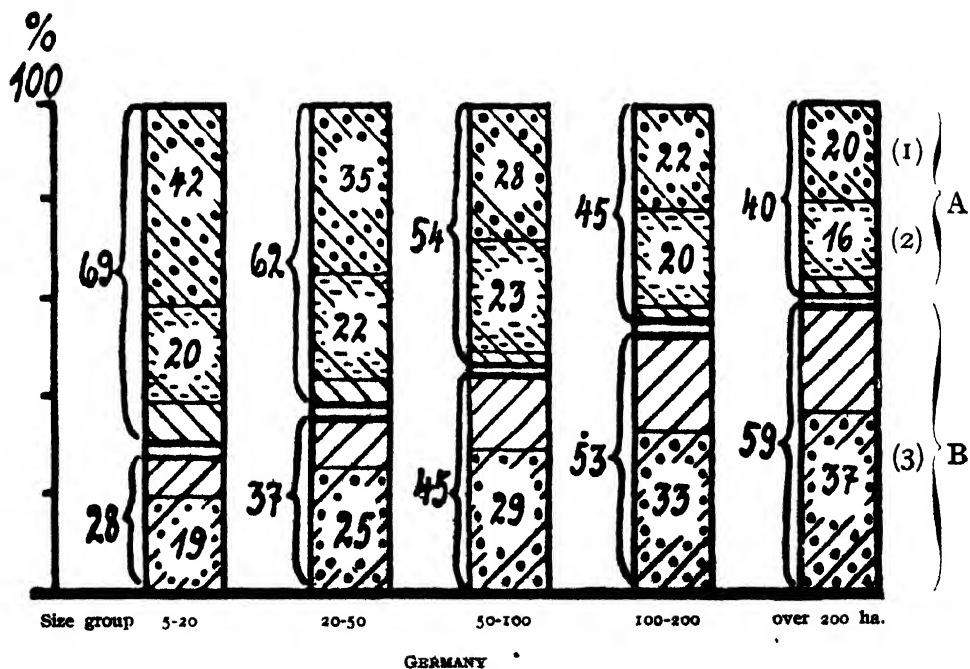
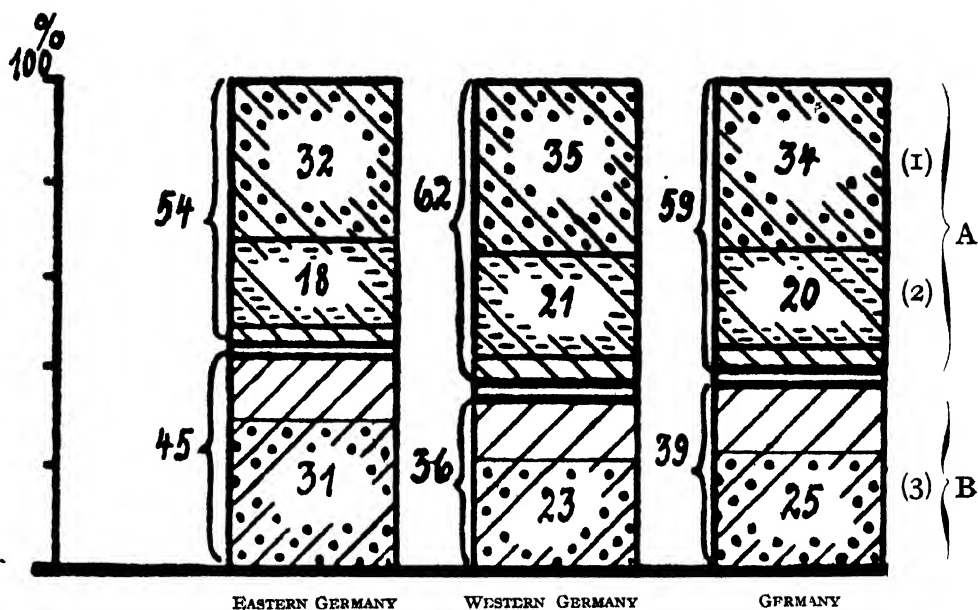
Proportionate Contribution of the different Size Groups of Farms in Germany to the Market Supply.

The *Betriebsstelle des deutschen Landwirtschaftsrates* has made use of the accountancy material at its disposal to institute an enquiry (1) into the extent to which the different categories of farms in Germany of five or more hectares of agricultural land take part in the supply of the market. The farms included represent over 82 per cent. of the area of agricultural land, 77 per cent. of the head of live stock, 62 per cent. of the head of pigs and in value 90 per cent. of the supply of the home markets. Farms under five hectares could not be taken into consideration as there is not sufficient accountancy material available. In regard to the valuable results of this enquiry it can only be hoped that within some measurable time it may prove possible to extend accountancy methods also to the farm holdings under five hectares, so as to fill the existing gaps. It is clear that the fullest acquaintance with the proportion in which the different size categories of farms supply the markets is of the greatest importance for the solution of many problems of agrarian policy.

Comparison of market supplies is made on the basis of values. A quantitative comparison of the products consigned to the market would be preferable, but no bases for this were supplied by the accountancy results. The enquiry is mainly based on the five year average of the accountancy results for the years 1924-25 to 1928-29. Receipts for special products are only included in the turnover, if they

(1) FENSCH Dr. H. L. *Bauernbetrieb und Grossbetrieb als Versorger des deutschen Marktes*. Heft 21 der Veröffentlichungen des Deutschen Landwirtschaftsrates. Berlin 1930.

GRAPH I. — *Composition of the Market Supply in percentage of the average for 1924-29*
(shown for the farms of 5 hectares and over of agricultural land).



A = Live Stock products: (1) = Live stock; (2) = Milk.
B = Field Crop products; (3) = Cereals.

are of a supplementary character only. Otherwise special products are disregarded, alike those, such as wine, tobacco, hops, fruit, which come from the small and very small farms, and the products of the special types of enterprises, such as the pig fattening farms, dairy farms, poultry farms and farms attached to distilleries.

Constituents of the market supply. — A comparison of the constituents of the output of the farms of five or more hectares of agricultural land in Eastern and Western Germany shows the distinctive structure of the size groups in the two regions. In Eastern Germany 45 per cent. of the value of the produce marketed consists of crop products and 54 per cent. of live stock products as against 36 and 62 per cent. in Western Germany. In Eastern Germany 31 per cent. of the market turnover consists of cereals and in Western Germany about 25 per cent. The diagram on page 298 is taken from the publication referred to and indicates the composition of the market supply, taking the farms reviewed as an aggregate and for the separate size categories. The elements not more precisely defined consist in miscellaneous crop and live stock products.

Participation of the size groups of farms in the market supply. — In Table I the proportionate extent to which the separate size groups enter into the market supply is shown :

TABLE I. — *Size groups of Farms in relation to the Market Supply.*

SIZE GROUP ha.	Percentage of the area of agric. land of each size group in the total area of farms with 5 ha. or over of agric. land	Percentage of the separate size groups in the commodities indicated as supplied to the market by farms of 5 ha. and over of agric. land						
		Cereals	Potatoes	Cattle	Pigs and sucking pigs	Sheep	Milk and dairy products	Total market supply
		%	%	%	%	%	%	%
5 to 20	43.4	33.1	35.6	54.6	56.8	6.4	44.4	48.7
20- 50.	24.1	23.3	18.7	24.1	24.0	11.9	25.5	23.6
50-100.	8.0	9.8	9.1	7.1	6.7	6.4	9.7	8.6
100-200.	5.9	8.4	8.5	4.4	3.6	10.0	6.4	6.5
over 200	18.6	25.4	28.1	9.8	8.9	65.3	14.0	17.6
	100	100	100	100	100	100	100	100

It is clear from the above table that the proportion of the size groups in the market supply nearly corresponds to the proportion of each in the whole area of agricultural land. It must however be emphasised that the foregoing figures merely relate to the participation in the market supply and not to the productive capacity of the separate groups, for which it is essential to determine not only the power of supplying the market but also other factors, such as the total gross yield, the net yield and the social income. Moreover productive capacity can only be ascertained by taking as a basis similar economic and natural conditions of production. The quantity of products not coming on the market varies according to the farming system and the size of the farms, but on the whole tends to diminish with the increase in the size of the farm.

On the other hand the distribution of the farms under review over the different regions of Germany is such that the proportion of the medium and smaller farms is greater in Western Germany while the large farms preponderate in Eastern Germany. The result of this distribution is that natural and economic production

conditions are more favourable, taking the whole of Germany, for the small and medium sized farms, and hence in Table I these size groups show higher percentages. When, however, economic and natural conditions are similar, higher market capacity of the larger farms should result. A comparison of the taxable value of land in farms of various sizes in Eastern Germany, however, actually shows these conditions to be similar, and hence as appears from Table II, the larger farms show a higher market capacity. In Western Germany relatively more favourable conditions attach to the larger farms, and hence again there is higher market capacity.

TABLE II. — *Size groups of farms in relation to market supply and economic region.*

ECONOMIC REGION	PERCENTAGE of	SIZE GROUP IN HECTARES					%
		5-20	20-50	50-100	100-200	over 200	
Eastern Germany	agric. land	27.6	19.3	8.2	8.3	36.6	100
	market supply	24.5	17.0	7.8	9.7	41.0	100
Western Germany	agric. land	54.3	27.3	7.9	4.2	6.3	100
	market supply	51.8	26.4	8.6	5.2	7.7	100
Germany	agric. land	43.4	24.1	8.0	5.9	18.6	100
	market supply	43.7	23.6	8.6	5.5	17.6	100

H. B.

Farming Costs in Eastern Canada.

An enquiry has been made, based on the records of the Dominion Experimental Farms in Eastern Canada, into costs of producing field crops.

In Eastern Canada where there is considerable diversity of crops, and where in addition live stock enterprises constitute a very important source of revenue, it is by no means an easy matter to determine the relative profitableness of various competing crops, but at the same time it has been realised that a thorough study of costs and returns is essential to any improvement in the financial aspect of farming.

The presentation of the summarised results of these studies may usefully be prefaced by a general statement of cost of production factors and return values or market prices of products, as these are on the whole found to obtain in Eastern Canada.

Cost of Production Factors.

	\$ cts
Use of land and buildings, <i>i. e.</i> , rent or interest, taxes and upkeep, per acre	6 00
Manure, value <i>plus</i> cost of applying per ton	1 50
Machinery, total annual charge per acre	2 85
Seed, seed grain at 50 % above market price, grass seed at actual cost	—
Twine, per lb.	0 15
Manual labour, per hour	0 22
Horse labour	0 10

Return Values of Crops or Market Prices of Products.

	\$	cts.		\$	cts.
Oats per bushel	0	59	Oat and barley straw per ton	4	00
			Wheat straw	2	00
Barley " "	0	92	Clover and timothy hay " "	11	75
			Corn <i>i. e.</i> maize silage " "	3	52
Wheat " "	1	50	Sunflower silage	3	36
			Oats, peas and vetch silage	4	20
Potatoes " "	0	60	Sweet clover silage.	3	67
			Mangels (compared with hay)	1	96
			Mangels (compared with grain)	4	05

Taking these various items in turn :

(a) The charge per acre for *use of land* is obtained by multiplying the value of the land per acre by the current rate of interest on first mortgage, and then adding the upkeep and amount per acre of taxes.

(b) The charge of \$ 1.50 per ton of *manure* includes cost of hauling and applying, estimated at 50 cents per ton. The assignment of the value of \$1 per ton is really only a method of crediting the live stock department of the farm with this value, regarded as a fair average, for each ton of manure produced. The percentage of value received by any particular crop naturally depends on the place of such crop in the rotation, *i. e.*, according to the degree of removal from the original application of manure. For example, in a three year rotation, the successive crops receive respectively 50, 30 and 20 per cent. of the value of the application. The estimate must however be regarded as somewhat arbitrary as it is impossible to fix percentages accurately, more especially in the case of commercial fertilisers which are more liable to be affected by the character of the season.

(c) The figure for average annual cost of operating *farm machinery* — \$2.85 per acre — represents the result of a survey made in the form of a questionnaire sent to representative farmers in Eastern Canada, of which the particulars will be given later.

(d) The market value of *straw* varies greatly and the values assigned are those in use on the Experimental Farms.

(e) The value of *silage crops* is also difficult to express exactly, as the importance of silage does not lie in its market value but in its availability for the stock on the farm. It is usual to compare the various types of silage with hay on the basis of dry matter content and feeding value. In these studies, 100 lbs. of hay are taken as equal in value with 350 lbs. of sunflower silage, 333 lbs. of maize silage, 320 lbs. of sweet clover silage, and 280 lbs. of mixed oats, peas and vetch silage.

(f) *Roots* vary in value according as used as roughage or concentrated feed, *i. e.*, in large or in very small quantities. As compared with hay, 600 lbs. of roots are taken as equal to 100 lbs. hence the low value shown in the above table. If dried and fed like grain in small quantities, their value per ton appears to be more than twice as great.

(g) The charge for manual *labour* includes all allowances for board and lodging ; that for horse labour represents the result of the total cost of keeping a horse for a year divided by the total number of hours worked by the horse in the course of one year.

A comparison of the average yields obtained by the Experimental Farms during the five years 1922-26 with those obtained over the same period throughout the five provinces of Eastern Canada (Ontario, Quebec, and the three maritime provinces) shows that consistently higher yields were secured on the Experimental Farms. This is due undoubtedly to the use of improved agricultural methods. All costs of production subsequently given correspond to these higher yields of the Experimental Farms, and no information is at present available in regard to costs of production on the average farm in these provinces.

Crop	Average yield per acre for five years 1922-26			
	On Experimental Farms of Eastern Canada		throughout the five eastern provinces	
Oats	55.8	bushels	33.3	bushels
Spring wheat	27.2	"	17.7	"
Barley	39.4	"	27.5	"
Potatoes	26.4	"	16.9	"
Hay	2.46	tons	1.51	tons
Maize for silage	13.53	"	8.50	"
Mangels	18.10	"	10.28	"
Sunflowers	18.82	"	(no information)	
Sweet clover for silage (Ottawa only)	7.90	"	"	"

In contradistinction to the prairie provinces of Canada where wheat is the most important crop, oats form the most important cereal in Eastern Canada, and accordingly in the statement of production costs, this crop will stand first.

*Average Cost per acre of producing oats on seven Dominion Experimental Farms
in Eastern Canada during period 1922-26.*

	\$	cts.
Use of land and buildings	6	00
Manure (30 per cent. of 16 tons at \$1.50 per ton).	7	20
Seed 2 ½ bushels	2	20
Machinery total annual charge.	2	85
Twine 3 ½ lbs.	0	52
Manual Labour 22 hours at 22 cents	4	84
Horse Labour 32.2 hours at 10 cents	3	22
Threshing 55.8 bushels at 4 cents per bushel.	2	23
Total cost per acre	29	06
Less value of straw (1.26 tons at \$ 4)	5	04
	24	02

With yield of 55.8 bushels per acre cost per bushel is about 43 cents.

If there is no actual cash outlay for the manure, the charge for that item would be reduced to \$2.40, reducing total cost of production to \$24.26. If the value of the straw should be lower, there will be a corresponding increase in the cost per bushel of the grain. As regards labour, cultivation work may be reckoned at 9 hours of manual labour and 24.4 hours of horse labour, harvesting at 13 hours of manual and 7.8 hours of horse labour.

Costs of marketing will vary with the distance from the market and the value of the bags in which the oats are sold.

The cost of producing barley and wheat is practically identical with that of producing oats. With an average yield of 39.4 bushels per acre, barley cost 61 cents per bushel of grain, the value of the straw being reckoned the same as oat straw, \$ 4 the ton. The value of wheat straw is only \$ 2 per ton, and with an average yield of 27.2 bushels the acre, wheat has cost 99 cents per bushel to produce.

It will be seen that with market prices at 59 cents for oats, 92 cents for barley and \$1.50 for wheat the above costs of production will ensure satisfactory profits, unless costs of marketing are unduly high.

Cost of Producing Hay (one cutting per season) on six Dominion Experimental Farms from 1922 to 1926.

	\$ cts
Use of land and buildings	6 00
Manure (20 per cent. of 16 tons at \$ 1.50 per ton) . .	4 80
Seed (clover and grass mixture)	2 39
Machinery, total annual charge	2 85
Manual labour 13.2 hours at 22 cents	2 90
Horse labour 10.1 hours at 10 cents	1 01
Total cost per acre	19 95

With an average yield of 2.46 tons per acre, the cost per ton is \$8.10. If no valuation is put on manure, the charge for applying will stand at \$1.60 per acre, which will reduce cost of hay per ton to \$6.80.

Costs of producing maize silage and mangels may be shown in one table, the average in each case being that of all the Dominion Experimental Farms in Eastern Canada over the five year period 1922-26 as before. (See page 304).

The average yield of maize silage was 13.53 tons per acre, that of mangels was 18.10; hence the respective production costs per ton are for maize silage \$ 3.46. and for mangels \$3.30.

In regard to other forms of silage, cost of production per ton of sunflower silage is \$2.67, of sweet clover \$3.10, and of the mixed oats, peas and vetch silage \$5.66, the yields being respectively 18.82, 7.90 and 6.79 tons per acre. The sweet clover silage is the cheapest per acre, the cost being only \$25 per acre, mainly on account of low requirements in manure. Silage is increasingly important in Eastern Canada in view of the importance of the live stock industry, and is largely prepared for use on the farm itself. It will be noted, for example, that the market price, \$4.20,

Costs of producing Maize Silage and Mangels, compared.

	Maize Silage			Mangels	
	\$	cts		\$	cts.
Use of land and buildings	6	00		6	00
Manure 40 per cent. of 16 tons at \$1.50 per ton.	9	60		9	60
Seed ½ bushel	1	23	9 lbs. at 40 cts.	3	60
Machinery total annual charge	2	85		2	85
Twine 3 ¾ lbs	56		none	—	
Manual labour at 22 cts. 73.2 hours	16	32	137.9 hours	30	34
Horse labour at 10 cts. 69.5 hours	6	95	73.3 hours	7	33
Ensiling equipment	3	38		—	
Total cost per acre	46	89		59	72

of the mixed silage is below the production cost, \$5.66. As this silage has the highest feed value in comparison with hay and can be grown in districts too cool for maize, it is worth the farmer's while to grow it although it cannot be marketed at a profit. On the other hand, sweet clover is found to be a useful crop for poor soils although it cannot tolerate any acidity. It is clear that other considerations than the market price enter, although that price naturally reflects the feed value as compared with hay. The following statement is recapitulatory, but may be useful as a summary of the relative values of the different stock feeds.

100 lbs. hay = 280 lbs. « mixed » silage	market price	\$4.20	per ton
» » = 320 sweet clover silage	» »	\$3.67	» »
» » = 333 lbs. maize silage	» »	\$3.52	» »
» » = 350 lbs. sunflower silage	» »	\$3.36	» »
600 lbs. mangels	» »	\$1.96	» »

Market price of hay per ton \$11.75.

Reference has already been made to the difference in the value of mangels, or similar root crop, according to their use as roughage or as concentrated feed, in other words as compared with hay or with grain. In fact, 600 lbs. of roots are the equivalent of 100 lbs. hay, while one ton of roots yields 200 lbs. of dry matter or the same quantity as is yielded by 210 lbs. of barley and oats mixed in equal proportions. The actual cash values are respectively \$1.96 for roots as roughage, and \$4.05 or more twice as much if treated as a concentrated feed. It will be seen that from the market standpoint the crop is grown at a loss in the former case, and at a profit in the latter.

Over one half of the cost of growing roots consists in the cost of the manual labour, which is indispensable during cultivation and cannot easily be replaced by

machinery in harvesting. More than one third of the manual labour has to be given to hoeing and thinning. Root crops accordingly are only remunerative if there is a surplus of home labour, or if grown in small quantities to supply concentrated dry feed.

The average cost of producing potatoes on four Experimental Farms in Eastern Canada is shown as follows; the average yield for the period 1922-26 having been 264 bushels per acre.

Cost per acre of producing Potatoes.

	\$	cts.
Use of land and buildings	6	00
Manure and fertilisers 50 % of 18 tons at \$1.50 . .	13	50
Seed 18 bushels at 90 cents	16	20
Machinery total annual charge	2	85
Spray materials	6	50
Manual labour 110 hours at 22 cents	24	20
Horse labour 91 hours at 10 cents	9	10
Total cost per acre . . .	78	35

Cost of production per bushel 30 cents.

The cost of marketing may be reckoned at about 15.6 cents per bushel.

It may be useful to present in tabular form for the different crops the cost of production per acre, cost per acre of marketing, profit per acre, and finally the hours of labour (manual and horse) required to produce one acre of each crop.

	Production costs per acre \$ cts	Marketing costs per acre \$ cts	Profit per acre \$ cts	Manual labour hours	Horse labour hours
Oats	29 00	3 12	5 78	22	32.2
Barley	24 03	—	10 00	—	—
Wheat	26 92	—	12 34	—	—
Hay	19 95	7 28	1 67	13.2	10.1
Silage					
maize	46 89	—	0 73	74.2	69.5
sunflower	50 27	—	12 97	—	—
mixed	38 47	—	loss 9 95	—	—
clover	25 00	—	3 99	—	—
Mangels	59 72	—	loss 24 24 (or profit 13 58)	137.9	73.3
Potatoes	78 35	41 36	38 69	110.0	91.0

The complementary data as to yields per acre and market prices have already been shown in tabular form (see pages 301 and 302).

In addition to the studies of costs of crop production, an enquiry was undertaken in 1925 by the Central Experimental Farm at Ottawa in regard to *capital invested in and operating costs of farm machinery*. Approximately 1,300 replies were received from the five provinces of Eastern Canada.

In the first place, information was obtained as to the average length of life of farm machines. Taking 35 different types including the farmer's automobile, the average was 20.2 years, but a number of the important machines, *e. g.*, the cultivators, binders, seed drill, hay harvesting machines, and threshing machine had a longer life up to 25 and more years.

From the replies the average inventory value of machinery per farm may be taken at \$871.04, the investment in machinery shed at \$270.34, and number of acres under cultivation per farm averaged 76. In calculating depreciation, at 5 per cent., the value on which it is reckoned should be twice that of the above inventory value, as the machinery included may be regarded on *the average* as having completed half its useful life. The interest may be charged at 6 per cent on the inventory value of the machinery. The following is accordingly the statement of the average annual cost.

	\$	cts
Depreciation 5 % on \$1742.08	87	10
Interest at 6 % on \$871.04	52	26
Repairs	55	72
Housing	21	62
Total annual cost	216	70
Cost per acre of cultivated land	2	85

The above figures are applicable only to farms where there is no special machinery, and do not include farms owning tractors, trucks and automobiles, or threshing outfits. Taking the average of all reporting farms, and including those using such special machinery, the average annual cost of machinery per acre in Eastern Canada would be \$4.00.

Wide variations occur between individual farmers in the amount of machinery owned. On the average, however, the cost item representing machinery in the total cost of producing a crop has been seen to be a relatively small percentage. It appears to be economical to use large, labour saving, machinery whenever the size of the farm will warrant its purchase.

A separate enquiry was made as regards *farm tractors* and their advantages. Replies were received from 179 tractor owners in Eastern Canada and British Columbia. Fifty-five per cent. of those replying stated that they had found their tractor profitable. More work can be done in a ten hour day if a tractor is employed than is possible when the same machines are drawn by horse teams, as is shown by the statement on page 307. It should be added that in Eastern Canada, the usual horse outfit is a two-horse team, the three-and four-horse team being comparatively infrequent.

It will be understood that results such as these correspond to favourable conditions for tractor work. Where the land is too hilly, too stony, too sandy or too wet, results given by the tractor are not so good, and it may be more economical to use horses. Similarly on very small farms, where two or three horses are sufficient for the work, a tractor is uneconomical, as in any case horses would have to be kept to do the work for which the tractor would be unsuitable. It is claimed

Comparison of number of acres worked in 10-hour day.

	Horses			Tractors	
	2 horse team	3 horse team	4-horse team	2-plough tractor	3 plough tractor
Ploughing	1.5	2.0	3.0	5.2	6.7
Disking	7.0	9.0	12.0	16.3	18.9
Cultivating	8.0	10.0	15.0	18.1	18.7
Harrowing	13.0	17.0	—	26.5	26.4

that about 100 acres of cultivated land is the smallest area that will justify the purchase of a tractor.

In regard to the *costs of operating a tractor*, the fixed or overhead charges must be distinguished from the direct operating costs, and both taken into account in calculating the cost per day. The fixed charge includes depreciation, interest, repairs and repair labour; the total of these must be divided by the number of days of work performed annually by the tractor. To the figure obtained must be added the direct operating costs, *i. e.*, fuel, oil, and the wages of the operator per day. The following statement in respect of two-plough tractors is based on returns for 130 such tractors, with average life 12.8 years, average cost price new \$728, and average present value \$445.50. The rate of depreciation is taken as 7.8 per cent. The annual fixed charges may be shown as follows:

Yearly depreciation charged on cost price	\$ 56.79
Annual interest at 6 % charged on present value	26.72
Average annual repairs and repair labour	20.00
Total annual overhead	103.51

Hence with an average of 55.3 days use per year, the fixed or overhead charge for one day is \$1.87.

The total charges per day, fixed and direct operating, are accordingly as follows:

Fixed charge per day	\$ 1.87
Average daily fuel cost	3.16
Average daily lubricating oil cost	0.64
Tractor cost per 10-hr. day	5.67
Daily cost of operator	3.00
Total operating costs per day for a two-plough tractor	\$ 8.67

The costs per day for a three-plough tractor are similarly calculated at \$10.22.

The comparative costs per acre of farming operations performed by horse power or tractor power may now be shown as below:

Costs per acre of operations performed with horse or tractor power in 10-hour day.

	Horses			Tractors	
	2-horse team	3-horse team	4-horse team	2-plough tractor	3-plough tractor
	\$ cts	\$ cts	\$ cts	\$ cts	\$ cts
Ploughing	3 33	3 00	2 33	1 65	1 52
Disking	0 71	0 66	0 58	0 53	0 54
Cultivating	0 62	0 60	0 46	0 48	0 55
Harrowing	0 38	0 35	—	0 33	0 38

Comparing the above statement with the previous one of the number of acres worked in a 10-hour day, it will be seen that the two-plough tractor not only ploughs more than three times as much per day as the two-horse team, but does so at one-half the cost per acre. There is also a fairly substantial saving for disking and cultivating, while for harrowing it would appear that the horses do the work as cheaply as the tractor. The reason of this may be that there were not available on the farms a sufficient number of sections of harrows to be pulled by the tractor, and hence some of the tractor power was wasted. Similar reasons probably account for the fact that the three-plough tractors appear to do so little more work than the two-plough and also at higher cost.

Farmers not owning tractors frequently hire the use from tractor owners, and in in Eastern Canada 25 per cent. of the work done was on this basis. The estimate of the number of days per year of use of tractor includes hiring as well as owner's use.

The number of farms in Eastern Canada has in the course of the last forty years decreased by approximately three per cent., while the crop acreage has increased 16 per cent., this increase being more marked in Ontario and Quebec than in the smaller Maritime provinces. It will be remembered that it is precisely those 40 years which have seen the development of the prairie provinces of Western Canada.

*Comparison of Eastern Canada and the Prairie Provinces
in respect of farming development 1881-1921.*

	1881	1921	1881	1921
	Number of acres under cultivation		Number of farms	
Maritime Provinces	14,777,000	17,132,000	451,191	433,466
	3,600,000	32,187,000	55,176	255,657

The number of acres under crop per farm has remained almost the same in the three Maritime provinces of Eastern Canada, *viz.* about 33, 13 and 24 acres respectively, while in Quebec province there has been an increase in the forty years 1881 to 1921 from an average of 30 acres per farm to 43.3 acres, in Ontario from 40.4 to 46.3 acres under crop per farm. The corresponding weighted averages for all Eastern Canada are 32.7 and 39.5. It may be noted that in Saskatchewan in 1921, the average was 149.2 acres in crop per farm. The fact is that in the Eastern States, as in the New England States of the U. S. A., the size of the farms has remained much the same as when the original settler cleared the land, put up his buildings as best he might, and sowed and reaped the land by his own manual labour or with scanty equipment.

One important change that is going on in Eastern Canada is the transformation from the growing of farm crops to the production of live stock products, mainly meat and dairy products. Of field crops hay constitutes the largest percentage, *viz.*, 37 per cent. of the total area of field crops in Ontario to 72 per cent. in Nova Scotia; grain crops form 55 per cent. in Ontario and 19 per cent. in Nova Scotia. The remaining percentages include potatoes, roots, maize and other forage crops.

The general object of the cost of production studies is to discover methods of reducing costs. Among the most important methods of such reduction is the production of larger yields per acre which depends on the adoption of better farming methods. Many items in the cost of growing a crop are the same whether the crop be large or small, only a few, notably costs of hauling, storing and threshing, vary directly with the yield, but these are relatively a small percentage of the total cost. Larger yields must entail greater costs per acre but will as a rule give smaller costs per bushel or ton.

Another method of reducing cost of production and one which has been especially illustrated here is the use of larger machinery and more labour-saving equipment, reducing the comparatively high proportionate expenses of manual and horse labour. It has been shown that the two-horse team in almost universal use is an expensive method of effecting many field operations. For small farms, unable to meet the cost of separate purchases, co-operative purchase and ownership may in certain cases be recommended.

The substitution of a larger percentage of more profitable for less profitable crops is a problem which requires very careful study, as many factors enter including in Eastern Canada the increasing importance of live stock products. The object should always be to adopt a rotation which includes crops which do not conflict with each other in their labour requirements, which give the highest profit per acre and which also provide for the full-time work of the available manual and horse labour.

Finally in Eastern Canada larger sized farms or a greater area of land under cultivation would seem to be necessary. The average area of 39.5 acres, of which 48.5 per cent. is under grass is certainly too small for remunerative production, in view of the fact that overhead expenses for buildings, machinery and management are all heavier on the small acreage.

HOPKINS E. S., GOSSELIN A. and ARMSTRONG J. M. : Cost of Producing Farm Crops in Eastern Canada. Division of Field Husbandry. Dominion Experimental Farms. Dominion of Canada. Department of Agriculture, Bulletin No. 115, New Series. Ottawa, 1929

C. H.

ECONOMIC AND SOCIAL CONDITIONS OF THE AGRICULTURAL CLASSES

Measures of Agricultural Policy in Chile.

From the Message of the President of the Republic of Chile to the National Congress, dated 21 May 1930, it appears that the Government has taken advantage of all means at its disposal to develop the livestock production and the agricultural industries, and to give an economic direction to every branch of production.

According to the Message, the crops grown in Chile should be exclusively those

which, given the world price situation and the natural climatic conditions of the various regions, offer the largest margin of profit.

The State should encourage credit and by new grants in aid those activities which in each zone seem likely to secure a maximum return. With this object the law for increasing fruit cultivation was proposed and approved and packing plants were established in the zones best suited for apple production, equipped for grading, storage and packing; these were supplemented by cold storage plants at the ports of embarkation. Further, in view of the exceptional conditions which the country offers for the production of wines for export, a measure was enacted authorising the establishment of co-operative wine making societies (*Bodegas*), for the production of typical wines prepared scientifically in the district of production, the wines themselves being grown by small holders in scattered vineyards of varying types.

The Government considers that the constantly increasing competition on the world markets should prove an inducement to the Chilean farmer to abandon his individualistic attitude and to move in the direction of a free and loyal co-operation which is always undergoing further organisation and concentration.

Accordingly the Government is working actively to give execution to the law on agricultural co-operative societies of 14 January 1929, and to diffuse the new industrial co-operative spirit, presupposed by the law.

By the foundation of the first associations of this type prospects appeared of the industrial transformation of Chilean agriculture.

The Government is convinced of the necessity for developing credit for agricultural industries and of reducing the interest payable on such credit, and has made provision in this sense by the Law of 28 January 1930. The intention is not merely to lower the interest within the limits allowed by the present situation, but to create intermediate credit, lying between agricultural and trading credit, required for facilitating the construction of silos, warehouses, and other land and agricultural improvements, amortisable in ten years. The subdivision of agricultural property, which is encouraged by the law of 10 December 1928 on agricultural land settlement, and by the Bank of Colonisation established by this same law, will make it possible for persons who are now living in the towns to take up intensive cultivation on small holdings on which they and their families will work. The Bank has already subdivided certain large estates (*latifundia*), and has already founded a first settlement in Peñaflor with immigrants from other countries selected and recruited for the purpose. And since it is of importance to the region that small farm holdings should be developed, by the law of 9 January 1930 for increasing the Government grant to the Bank at 100 million pesos, the Bank is empowered to issue notes.

It was later recognised as essential that the new lines of agricultural policy should be laid down by direct Government action, and a Secretaryship of State was created devoted exclusively to the study and development of agricultural and live stock production.

In the same way special enquiries were initiated for the development of the forestry industries, for the purpose of attracting settlers to the southern part of the country up to the present time under-populated, and of attracting selected immigration from other countries, and of thereby creating communities of a sound economic organisation both agricultural and industrial, with a view to intensifying the general production.

From the legislative and administrative programme, it is evident that Chile needs to increase the number and to extend the distribution of small agricultural holdings and in so doing it will be distinguished from other countries of South America where

small holdings either do not exist or are hampered by the general conditions of the rural economy.

The most recent Chilean statistics on the subject may be summarised as follows :

If from the 75 million hectares which form the territorial area of Chile 50 million hectares are taken which are still State property (but for the most part consist in mountains, lakes and deserts) there remain 25 million hectares of private property, which in 1926 were distributed as follows :

	Number of estates or holdings	Extent in hectares
Less than 5 hectares	47,928	75,970
From 5 to 20 hectares	42,817	788,073
» 51 » 200 »	15,627	1,308,429
» 201 » 1,000 »	6,991	3,184,112
» 1,001 » 5,000 »	1,985	4,260,446
over 5,000	599	10,061,177

These figures show that Chile in common with other countries of South America has to solve the problem of the breaking up of the latifundia which include more than half of the cultivated area.

This serves to explain not only the law referred to of 10 December 1928, on agricultural land settlement and on the Land Settlement Bank, but also the law of 8 May 1929, which has increased the capital of the section for rural development and land settlement in the Mortgage Bank so as to develop loans in this connection.

Mention should also be made of the laws of 6 September and 28 December 1928, establishing and organising the National Cold Storage Plant which is the principal means for developing the export of fruit.

Of still greater interest are the measures which are being taken for the large State public irrigation works, in close connection with the new policy in favour of fruit and vegetable cultivation.

The budget of the Irrigation Department for 1929 contained a sum of 15,650,000 pesos set aside for the completion of irrigation operations and for enquiries relating to, and the inauguration of, new works. Among these are some relating to irrigation areas of from 4,000 to 5,500 hectares.

The budget for 1930 provides for an expenditure of 33 millions of pesos for these large irrigation works.

It may be noted that in 1929 the number of persons employed in the Irrigation Department was 110 and the number of workmen employed on the works was calculated at about 1,500.

In regard to the new policy of the wine industry, the regulations for the co-operative wine-growing and winemaking societies should receive particular mention.

These societies are formed on the basis of new model rules prepared by the Ministry of Agriculture (Service of Viticulture and Enology), among the winegrowers and winemakers of the zones. The members pledge themselves to send a fixed quota of annual production of grapes for winemaking and sale.

Federations may be formed for organising export to other parts of Chile.

The regulations also include a statement of the functions etc. of a General Council which is to meet twice a year, so as to draw up balance sheets and illustrative reports.

Provision is made for the concession by the Government of a reduction of 30 per cent. at the charge of the Treasury, on the railway rates for transport of wines.

The societies are empowered to obtain loans up to 75 per cent. of the value of the wines which serve as guarantee, such loans being provided by the National Bank and other institutions to which the Mortgage Bank agrees.

The Central Bank is empowered to discount bills to the societies, at the same rate of interest which is fixed for the banks which are its shareholders.

These special provisions find their justification in the increasing success of the export of Chilean wines.

In 1926 Chile exported 489,430 litres of wine ; in 1927 the figure was 707,703 litres and in 1928, it was 5,520,541 litres.

The export to Germany which was 142,147 litres in 1926 rose to 2,439,686 litres in 1929.

It may be mentioned that Chilean wine, when leaving the country, is accompanied by certificates of purity and quality, given by Government experts whose reputation abroad is high.

The policy of fruit cultivation in Chile outlined by the law "Fomento a la Fruticultura" begins with the identification of the zones most suitable for each kind of fruit, with a view to forming a fruit growing map of the country ; and with the sale at moderate prices to farmers of fruit seedlings or slips of the varieties most in demand in Chile or abroad, and most adaptable to the zone in which is situated the farm of the applicant, special terms are given for payment by instalments, etc. The policy is continued by a study of the foreign markets which can most easily be captured, in particular England and Germany, and by official despatch to these markets of fresh and dried fruits.

A system of inspection of nurseries is also maintained with a view to ensuring the purity of varieties and guaranteeing the proper conduct of the trade ; provision is made for the supply of packing cases in the principal fruit-growing centres and for factories for the preparation of bye-products, as well as for travelling technical instruction given on the premises of the principal growers ; further for the institution of fruit experiment stations in the principal fruit-growing centres.

The value of the fruit export in 1929 was 1,653,922 pesos. Some kinds, as for example, apples, are purchased in preference by California and Havana, and it may be noted that one of the main factors of success has been the organisation of a service of large vessels fitted with refrigerated chambers and adapted for the transport of fruit to North America.

The National Society of Agriculture in Chile in its Report for 1929 has reported to the Government the necessity for special provisions for meeting a possible crisis of over-production of vines which may affect Chile as has been the case in Argentina.

The Society has drawn attention to the fact that the large sums invested in regional co-operative societies and wine-making associations for export are bringing about a considerable increase in production by the facilities given to the growers while no regard is paid to the capacity of the containers which the wine-making societies, on the basis of their institution, will have to supply themselves without charge.

Accordingly it will be necessary to ensure to the grower a remunerative placing of his products, on the basis of the study alike of production and of the consumers'

markets, since vineyards, once planted, cannot be given up and a transition made to other crops.

The Society has therefore urged the Government to arrange for an enquiry to be undertaken relating to : the probable production of the next four years during which the vineyards lately planted will be in full bearing ; the absorption capacity of the home market, and the probability of an increase in exportation.

No similar anxiety is felt in respect of fruit growing, as Chilean growers have a certainty of export to the United States in any case. Hence they rest assured that they can profit by the advantages of their soil and climate in supplying fruit to the American and European markets.

By the amalgamation of existing commercial exporting firms the « Gran Compañía Frutícola Sud-Americana » has been formed with a capital of 8 millions of pesos.

E. F.

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Ley número 4406 de 10 de diciembre de 1928 sobre Caja de colonización agrícola. *Diario Oficial*, n. 15,249. Santiago, 15 December 1928.

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CREDIT

Forms and Development of Agricultural Credit in France.

In a previous article (1) the fundamental lines of the organisation of agricultural credit in France were explained and the main results obtained in this respect were indicated. The report on the operations carried out by the regional banks of agricultural co-operative credit during 1928 and on the application of the law of 5 August 1920, submitted by the Minister of Agriculture to the President of the Republic, makes it possible to supply fresh information on the working and development of this important service. Agricultural credit in France is based essentially on three classes of organisations: local banks, regional banks, and the National Bank of Agricultural Credit (*Caisse Nationale de Crédit Agricole*), and is throughout regulated by the principle of the distribution of credit by means of agricultural associations and co-operative societies, which are regarded as the bodies most suitable for guaranteeing the proper utilisation of the loans. The diffusion of the credit is therefore to a large extent conditioned and bound up with the spread of the co-operative movement, which has received so much encouragement from French legislation. By the law of 1884 on the vocational unions (*syndicats professionnels*) the right of agriculturists to combine for the protection of their interests was recognised, and thereby the solution was prepared of the problem of agricultural credit, and the Méline law of 5 November 1894 rendered possible the formation of co-operative credit associations by agricultural unions or their members. Later funds for working were ensured to these associations (by the law of 17 November 1897) by an advance, repayable, of 40 million francs and by annual contributions made by the Bank of France. Later by the law of 31 March 1899 regional banks of agricultural credit were instituted for the purpose of placing these funds at the disposal of the local banks and in general to facilitate their operations.

The law of 29 December 1906 introduced long term credit in favour of the agricultural co-operative societies for production, transformation and sale; and thus gradually co-operation came to be an integral part of the system of agricultural credit.

Passing on to the different types of bank it is stated that the sole object of the local banks is "to facilitate and guarantee operations relating to agricultural production effected by members, whether individuals or associations". The bank capital is formed by contributions paid by such individuals or associations, or debentures assigned by name and not transferable except by grant with the approval of the bank. Banks cannot be constituted until one-fourth of the owned capital has been paid up; their area of operations is limited including one or more communes. They are in fact a necessary complement of the agricultural union (*syndicat agricole*). The same persons are for the most part members of the two institutions, and from the fact that they all know each other, it becomes quite easy to estimate requirements or the guarantees offered by any one member in reference to his economic position, general reputation and technical capacity. These banks are accordingly made responsible by law for examining the loan applications made by the farmers with full power

(1) LOUIS TARDY. Directeur général de la Caisse Nationale de Crédit Agricole: Agricultural Credit and Co-operation in France. *International Review of Agriculture*, Part. II, No. 8. Rome, August 1929.

of acceptance or refusal, and are empowered to make loans either on short or long terms or of medium duration.

The area of activities of the regional bank is much wider, frequently a whole department, and the local banks operating in that area are affiliated. The regional bank is mainly engaged in discounting bills given by members of the affiliated banks as guarantee for the loans made to them ; these bills bear the signature of the borrower and of the bank, and may be rediscounted by the regional bank at the Bank of France or other private credit institution. The capital of the regional banks is formed of contributions made by the local banks and individual members. Like the local banks, the regional banks are also empowered to receive deposits and savings ; they may moreover, if necessary, contract loans. As regards loans, the function of the regional bank is almost exclusively financial ; it supplies the funds necessary for the operations, but while having power, on its own responsibility, to refuse an application even though already passed by the local bank, it cannot directly make a loan, the case of a loan to a disabled ex-service man under certain conditions being an exception. The only direct operations which the regional banks can carry out are loans for a long period in favour of agricultural co-operative societies and associations ; applications for these are in fact received and examined by the regional banks and transmitted by them to the *Caisse Nationale*, which grants or refuses the advance.

At the peak of the organisation under consideration stands the *Caisse Nationale de Crédit Agricole*, a public institution, a corporate body with independent financial powers, established for the general purpose of ensuring the application of the law of 5 August 1920 (1), which consolidated the previous legislative provisions and is fundamental in respect of the subject. The main functions of the bank are : (a) the administration of the agricultural credit fund ; (b) the administration of deposits received from the regional banks ; (c) the issue of notes by the intermediary of the regional banks ; (d) the administration of the credits set apart by the law of 4 May 1918 relating to the bringing under cultivation of waste lands. It depends for the greater part of its resources on the advance of 40 million francs and the annual contributions made by the Bank of France, on the repayments of the sums lent in execution of the said law of 4 May 1918, which amount to about 100 million francs ; it may in addition receive deposits.

Three types of loans are contemplated by the French legislation on the subject : short, medium and long term ; the borrowers may be individuals or associations.

Short term loans provide the farm with working capital for the purchase of seed, fertilisers, fungicides, etc. The amount of these loans is left to the judgement of the different local banks ; the duration varies in general from nine months to one year ; the rate of interest may also vary according to the banks, under the limitation imposed by the decree of 9 February 1921, amended by the decree of 4 April 1929, which fixes a minimum for this rate, namely the rate of interest paid on the bank debentures and a maximum, which must not exceed by more than 1 per cent. the rate of the advances made on securities by the Bank of France. The rate may exceptionally be less than the rate of interest paid on the debentures, in the cases when the loans are intended for agricultural associations, but must not however fall below 3 per cent. The guarantee is constituted by bills, warrants, deposit of securities etc.

(1) See the text of the law in the *International Yearbook of Agricultural Legislation*, 1920.

Loans for a medium period are more especially intended to render possible for agriculturists the operations which, from their nature or extent, require a certain time for amortisation of capital invested. Under this heading are included minor farm improvements, enlargement or repair of farm buildings, land improvements, purchases of stock or machines, etc. Loans under this heading are of considerable social interest, since in this way farm workers can obtain the necessary capital to farm themselves and to cultivate a small holding. Such loans are made for a period of not more than ten years. The rate of interest is regulated in the same way as that for short term loans. A form of credit is here involved which has developed so rapidly as to require a special provision of funds the law of 15 July 1928 has in fact authorised the State to place at the disposal of the National Bank a sum up to 500 million francs.

Long term loans to individuals were introduced by the law of 19 March 1910 and are intended to facilitate the purchase, improvement, transformation or reconstitution of small holdings which the borrowers must undertake to cultivate themselves or with the help of their family. The opportunity is thus afforded to the farm worker of becoming owner of a small farm large enough to ensure him a livelihood, and to the cultivator who already owns a piece of land to enlarge his holding, or to construct on it the necessary buildings. Such a loan may also serve to ensure the preservation of a small holding in the hands of the same family, since in the event of the death of the parents the loan makes it possible for one of the sons to redeem the small family farm. In accordance with article 67 of the law of 19 December 1926 these loans are also employed to facilitate purchase and construction of houses for farm workers with a view to checking the rural exodus and relieving the housing situation in the rural centres. These loans cannot be made for a period longer than 25 years, their maximum amount is 60,000 francs and the interest is at present fixed at 3 per cent. for ordinary borrowers and at 1 per cent. for persons in receipt of war pensions.

Long term loans on the same conditions may be granted also to different types of associations (law of 29 December 1906), including (a) co-operative societies for production, transformation, preservation or sale of agricultural products coming exclusively from members' holdings; (b) co-operative societies for joint purchase and supply, (c) unions of employers and employed with exclusively agricultural objects; (d) societies of collective agricultural interest, for example, co-operative societies for supply of electricity.

The law of 27 December 1927 has authorised the local banks to make loans equally to communes and to communal unions for the execution of irrigation works, land drainage and similar operations.

On 31 December 1928 the number of local banks affiliated to the regional banks which have received loans from the State was 5,704 with a membership of 402,440, a paid up owned capital of 68,335,540 francs, and with reserve funds amounting to about 22 million francs. At the same date advances had been made by the National Bank to 99 regional banks with a paid up capital of 95,694,046 francs and with reserve funds amounting to 85,141,092 francs. The deposits received by them during 1928 amounted to 1,785,000,000 francs and the balance sheet total on 31 December was 633,500,000 francs.

The agricultural credit fund amounted on 31 December 1928 to 859,818,773 francs, practically all invested, since at that date only 659,276 francs remained available. To convey an idea of the impetus given to the agricultural credit operations by the *Caisse Nationale* it will be sufficient to note that from 1900 to 1920 the sum distributed in advances to the regional banks by the Committee attached to the

Ministry of Agriculture was 156,010,766 francs, while the *Caisse Nationale* in the period 1921-28, that is to say in eight years, has made these advances up to a total of 1,012,547,185 francs. Hence the total of these advances from 1900 to 31 December 1928 was 1,168,557,951 francs. The following table shows the distribution of this total sum among the different forms of credit, and in addition the loans outstanding at the end of the same year.

Forms of Credit	Total advances made from 1900 to 31 De- cember 1928 fr.	Outstanding on 31 December 1928 fr.
Short term loans	106,687,693	62,465,000
Medium term loans	268,360,000	199,724,073
Individual long term loans for facilitating the obtaining of small rural holdings	520,160,300	394,034,057
Long terms loans to associations, etc.	273,049,958	202,636,367
Advances to Departments and communes (Law of 8 December 1922)	300,000	300,000
	<hr/> 1,168,557,951	<hr/> 859,159,497

It should be noted that agricultural credit is arranged in France not only by the local banks of the type already described but by rural societies of the Raiffeisen type, the number of which is estimated at about 3000.

Considerable activity has been shown by the *Caisse Nationale de Crédit Agricole* in connection with the law of 2 August 1923, the object of which was to facilitate by means of State advances the distribution of electric energy in the country districts. Rural electrification is felt to be not only a means for intensifying of production but also a means of improving the social conditions of life and of keeping the farm workers in the soil. In 1928 the *Caisse Nationale* made 266 loans to a total of 59,838,800 francs, for the purpose of installation of electricity for 1152 new communes with 416,209 inhabitants. The total loans for this purpose made up to 31 December 1928 amounted to 202,790,476 francs, benefiting 5,718 communes with a total population of 2,935,822 inhabitants. If to this sum is added the amount of 60 long term loans made to associations etc. for rural electrification on the basis of the law of 5 August 1920, a total of 229,899,326 francs represents the whole amount disbursed in this way by the *Caisse Nationale* up to 31 December 1928.

G. C.

Ministère de l'Agriculture. Caisse Nationale de Crédit Agricole :

I. Rapport sur les opérations faites par les Caisses régionales de crédit agricole mutuel pendant l'année 1928 et sur l'application de la loi du 5 août 1920, présenté au Président de la République Française par le Ministre de l'Agriculture. Paris, 1930.

II. Rapport sur les opérations faites par la Caisse Nationale de Crédit Agricole pendant l'année 1928 en application de la loi du 2 août 1923 facilitant par des avances de l'Etat la distribution de l'énergie électrique dans les campagnes, présenté au Président de la République Française par le Ministre de l'Agriculture. Paris, 1930.

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Memorandum on Native Policy in East Africa Cmd. 3573. H. M. Stationery Office, London, 1930.

Colony and Protectorate of Kenya : Report of the Agricultural Commission, October 1929. Nairobi, Govt. Printer, 1929.

[These two publications are in a sense complementary, the one indicating certain general principles inherent in the administration of an important tropical territory in which the native population greatly out-numbers the European settlers, the other the Report of a Commission appointed in 1929 to consider and make recommendations in regard to the progress and organisation of agriculture in Kenya Colony.

The pronouncement made in the Kenya White Paper of July 1923 that the interests of the African natives must be paramount is reiterated in the new Memorandum, and is interpreted further in the sense that the creation and preservation of a field for the full development of native life is a first charge upon any territory. This is not to say that such an obligation is incompatible with the proportion of the development of the resources of the territory and of the property of its inhabitants, African and immigrant alike. The first desideratum is a general improvement in the standard of native life, alike in economic conditions, in physical health and in domestic and social hygiene, and in education. The African should be encouraged to make the most efficient use of his own resources for purposes of production, and should be free to work as he may wish, either in his tribal area or on his own individual holding, or if he prefers, in service for wages with private employers. There should however be no restrictions on the possession, occupation or use of land by the natives which compel them either directly or indirectly to the last of these three courses

It is also considered that Africans should be allowed, subject to any necessary safeguards for protection against disease or pests, to grow such crops and to keep such stock as they think most profitable. On the other hand, there may and should be administrative encouragement of the production of such crops and the raising of such stock as the native may prove best fitted to undertake and seems likely to bring him the best return for his efforts. In a separate note appearing in the August number of this Review, an account is given of such administrative encouragement of native agriculture in Nyasaland and of the proposed formation of a Native Agricultural Development Board. Provision for the training of the Africans to take part in public and local administration, on which stress is also laid in the Memorandum, will no doubt gradually find a place in this and similar schemes adopted in the various territories of East Africa.

The Report of the Commission is in part a survey of the progress of the main branches of the agricultural industry in Kenya (including native agriculture and stock) since 1920. In addition considerable space is given to proposals for re-organisation of the Department of Agriculture in the Colony with all the appropriate services and facilities for research, including the establishment of a small consultative Board of Agriculture and Development, the members of which are to be chosen for their experience of the agriculture of the Colony, native or non-native. It is fully recognised that many of the proposals so made can be realised only by slow degrees. As however it was the conviction of the Commission that it is essential to build up a system of mixed farming in Kenya as the basis of a stable agriculture, stress was laid on maintaining within the Department a close co-ordination between crop and animal husbandry, and there was a definite rejection of the alternative proposal for creating a separate Department of Animal Health, to which all animal questions would be removed. Emphasis was also

laid on the need within the Department of economic investigation and direction of settlers in regard to costs, marketing and co-operation.

Separate chapters are given to the two types of agriculture, settlers' and native agriculture. As is well known the European estates in Kenya have usually been very large, often under monoculture, worked under European management by native labour. There is now a movement for attracting to the colony agriculturists, who while still dependent on native labour, would settle on smaller estates in certain defined areas, and the creation of a Land Bank for provision of loans to such settlers is contemplated. The Commission approved this scheme, known as the Closer Settlement Scheme, in principle. It will be seen that the effect of any such policy will be a gradual, or possibly even rapid, increase in the demand for native labour, and for this reason the Commission urges on all settlers economy in the use of native labour. Such economy can be effected in two ways, by increased mechanisation, and also by the education of the African to greater efficiency. In regard to the former it may be noted that the Commission considers there is a pressing need for the introduction of larger supplies of white skilled agricultural labour. In regard to the latter, there was ample evidence received that the native employed upon a European plantation can be led to become a very efficient worker. Such a practical training in improved agricultural methods should obviously react not only to the advantage of the European planter, but to that of the African himself when he returns to his own land, while his standard of living will also have been raised during his employment on the European estate.

With this last consideration is closely connected that of the improvement of agriculture on the native reserves, to which an important section of the Report is devoted. The area of these reserves is about one-fourth of the total area of Kenya (208,320 square miles) and about five times the area alienated to non-natives.

The almost universal habit of keeping live stock not mainly for production, but as mere tokens of wealth, constitutes by far the most important problem affecting native agriculture. Cattle, usually of the poorest quality, and goats are practically looked upon as money, used for purchase of wives and as a sign of prestige, the skins only being regular articles of trade. The land in many areas is so heavily overstocked that vegetation is being eaten down to the roots and disastrous soil erosion is going on. The preservation of the land and, in fact, the continued existence of the tribes is thus at stake. It is considered that in the worst cases a compulsory reduction of live stock must be carried out and a meat factory established to take over the stock so purchased and convert into meat extract, fertiliser and hides. The most of the stock is of such poor quality that a working loss would be inevitable at first, but improvement of the stock should soon result. A further solution would be found if the natives could be induced or educated to eat meat, if only a few ounces per head per week, and their physical condition would improve as their diet as a rule is much deficient in protein. It is however by no means a simple matter to deal with the habit of raising stock as a form of social competition, and the suggestion is made to meet the native psychology by minting a special coinage to pay for the stock forcibly expropriated, stamped with the image of a bull or a goat, exchangeable for ordinary currency, but also perforated so that they could be worn for purposes of display, if preferred.

On the other hand the members of certain tribes have definite agricultural skill, and there is evidence that cultivation is improving and the growing of wheat and of European vegetables developing. In these cases the introduction of light modern machinery and the distribution of selected seeds are recommended. The production of food crops rather than inedible commercial crops is encouraged. Coffee growing by natives is a question attended by special difficulties as coffee pests and diseases may easily be spread from small scattered parcels where control is impracticable. To avoid any appear-

ance of racial discrimination it is recommended that coffee should be grown by whites and natives alike only on payment of a licence fee of £10 per annum and after approval by the Department of Agriculture of a plan of the proposed plantation with details of arrangements for curing

In conclusion it is clearly stated as the opinion of the Commission that the improvement of native agriculture is closely bound up with the general problem of raising the physique, the health and education of the natives, and that the advancement of the native in agriculture is but one part of the work of the administrative officers on whom rests the responsibility for their well-being]

COLSMAN Dr. A., "Wege zur Steigerung des Reallohnes über die Landwirtschaft". Stuttgart, 1930, 66 pp

[This little book has been written by a noted industrialist in response to a request made to him by the Württemberg Commission on the Rationalization of Agriculture. It is interesting in so far as it represents the industrialist's point of view on to-day's agricultural problems and their solution, which the author sees in combination at all cost, if necessary by force. Such compulsory co-operation must not rest content with marketing, but must involve all further preparation and manufacture of the produce. This, Dr. Colsmann claims, would reduce costs and cheapen the first necessities, thus raising the real wages of the workers, increasing the capacity of the home market and improving the balance of trade. Hitherto, capital in Germany has paid little attention to the economical organisation of the production of the basic foodstuffs, and large scale combination on the part of agriculturists themselves would help in remedying this omission, at the same time improving the economic conditions of Germany greatly. Even if the Author may not always have taken into account the peculiarities of the agricultural industry, especially in a country of predominantly small farms, the pamphlet contains much that is true and is well worth reading and thinking over]

DARLING Malcolm Lyall Rusticus Loquitur or The Old Light and the New in the Punjab Village London, Humphrey Milford, Oxford University Press 1930

[The author, who is Registrar of Co-operative Societies in the Punjab, undertook in the winter of 1927-28 a two months' informal tour of the districts of that province with the primary object of finding out what progress co-operation was making in the rural districts. In this way he came into every-day contact with a great variety of types of rural dwellers, and in this book he reproduces, often in a graphic translation of the actual words used, the opinions of his many interlocutors on rural reconstruction, housing and sanitation, new methods in farming, education, emigration, the position of women, and other factors affecting the social life of an Indian village. On the purely agricultural side, an increasing attention to vegetables is noted as a good sign; on the other hand the existing prejudice against poultry is nearly as strong as that against the pig, and the author draws an interesting comparison with the practice of the Italian peasant who knows how to get the utmost value from his small holding by the judicious use of minor live stock.

The three concluding chapters contain the author's own deductions and impressions as to the influence of the money lender and of the landlord, the part taken by women in the village economy (which varies much from district to district); and finally on the crucial question of the relation between religion and economics in the Indian village. How to preserve the villager's comparative indifference to material values and yet to enable him to escape from degrading conditions of poverty is in his opinion the problem for the reformer in India].

SOROKIN, Pitirim and ZIMMERMAN, Carle C. : *Principles of Rural-Urban Sociology*. University of Minnesota. Henry Holt & Co. New York, 1929, 652 pp.

[This book passes under review the various sociological aspects of rural, as compared with urban, life. It consists of five parts, of which the first deals with the "Rural World and the position of the Farmer-Peasant Class in the Great Society". The second dwells on the physical, and the third on the intellectual and psychological characteristics of the countryman as opposed to the townsman. In the fourth part the authors discuss "Rural-Urban Behaviour, Institutions and Culture", and in the fifth "Rural-Urban Migration". The book has no claim to being an original contribution to the "development of theoretical rural sociology", but it helps to clear the ground for future work in this direction: a service which fully justifies its publication].

AGRICULTURAL LEGISLATION

Summary of Laws and Regulations.

FRANCE. — Décret concernant la constitution et entretien d'approvisionnement de blés 31 May 1930. — *Journal Officiel*, No. 130 (1 June 1930).

[The purpose of this Decree is to ensure the necessary conditions for the maintenance of stocks of wheat and flours which shall guarantee a proper food supply for the population. These stocks are to be recruited by purchases carried out according to the Decree of 18 November 1882 with respect to State purchases. In the choice of buyers preference shall be given to farmers and to professional associations of agriculturists].

FRANCE. — Décret concernant la reorganisation du crédit mutuel et de la co-opération agricoles en Algérie. — 4 August 1930. — *Journal Officiel*, No. 185 (7 August 1930).

[This Decree amends articles 5, 6, 8, 20, 21, 23 and 35 of the Decree of 26 November 1925. The amendments have reference to the conditions to be fulfilled and the procedure to be followed in constituting co-operative credit banks, to the period for the repayment of medium term loans which is now extended to ten years; to loans of 100,000 francs granted for the management, transformation and reconstitution of small rural farms. The period for the repayment of these loans may even be extended to 25 years. The amended text of articles 20 and 21 contain the procedure in the event of the winding up of local banks and regulates their book-keeping. Art. 23 is repealed while art. 35 contains measures regarding expropriation and sale in the event of non-payment of the annual sums due and regarding the registration and cessation of mortgages].

FINLAND. — Lag n. 200 angående beviljande av medel till lån för lantbruksproduktionens främjande. — Förordning n. 201 om tillämpningen av lagen angående beviljande av medel till lån för lantbruksproduktionens främjande. — Förordning n. 202 angående fonden för lantbruksproduktionens främjande, 23 May 1930 — *Finlands Författnings-samling*, n. 200-204 (31 May 1930).

[Law No. 200 aims at encouraging agriculture by granting loans to small holders. With this object a credit of 20 million marks is to be placed on the State budgets on and from the year 1931 for a period of 4 years. The loans are intended in particular for land

improvement works and for land clearing operations. According to the provisions of § 2 of the Law the communes and the Limited liability Company known as the "Central Credit Institute of Co-operative Banks" are required to function as intermediaries between the State and the agriculturists. The fundamental purpose of the law is to help farmers whose economic situation is unsatisfactory or those who own or lease an area of cultivated land which, taken together with the area converted into natural meadows and pasture ground, rises to a maximum of 15 hectares, or in the case of forest land in the South, to 30 hectares. In the northern regions the maximum is 110 hectares. The law fixes the period for the allocation of the loans to communes and to the Credit Institute and lays down the amortization conditions and the rate of interest. § 6 repeals the law of 18 May 1929.

§ 2 of Decree No. 201 approving the above law, authorizes the State Bureau to re-allocate funds for the development of agriculture.

Decree No. 202 contains rules defining the conditions for the grant of loans, the procedure in the case of applications and stipulations concerning the proposed scheme of improvements. The Administrative Commission of the Agricultural Credit Banks is authorized by this Decree, to exercise control over the employment of the loans granted and to denounce the contracts where the credits are not actually employed for the stated purpose. The Resolution of 3 June 1929 containing the regulation for the administration of funds destined for the development of agriculture is repealed].

SWEDEN. — Förordning n. 317 om jordbrukets kreditkassor. 3 July 1930. — *Svensk Författningssamling*, n. 317-318 (30 July 1930).

[The above Decree is concerned with the system of agricultural credit in Sweden. The organization includes *agricultural banks* and *central agricultural credit banks* and seeks to encourage agriculture by granting loans to smallholders by the intermediary of the bodies mentioned.

The law lays down the limits of the responsibility of the central banks with respect to operations carried out by agricultural credit banks, the amount of the guarantee granted by the State, the conditions for the utilization of reserve funds, etc. The law also contains precise directions as to the conditions which central banks must fulfil in order to be approved, fixes the limits of their sphere of action, the entrance dues, the liability of the members and the conditions for the granting of loans, the methods for the payment of deposits and of dividends.

The law also contains rules on the organization and functioning of *agricultural banks*, lays down the conditions of affiliation to the central bank which has a branch in the district served by the agricultural banks. In the event of there being no such branch in the district in question, the agricultural bank may be affiliated to the central bank designated by the administration of the agricultural credit bank.

The law lastly contains measures relating to the applications for recognition to be addressed to the provincial administration, to the compilation of statistical data, book-keeping etc].

CZECHOSLOVAKIA — Zákon ze dne 10. dubna 1930 o výrobě chleba. 10 April 1930. — *Sbírka Zákonů a Nařízení*, S. C. No. 21 (24 April 1930).

[This law has been passed with the object of regulating the bolting percentage of flours intended for making rye bread. No bread may be sold unless made with flour

bolted at 65 % or well bolted at 65 % at most with the admixture of 10 % of flour prepared from breadstuff wheat.

Mixed flours may not be placed on the market ; flours may only be mixed by bakers for the purpose of their trade.

Rye flours as well as wheat flours may only be sold in bags weighing at least 50 kilograms. The bags must bear the name and address of the producer as well as an indication of the kind of flour contained in them.

Bakers must stamp their trade or other distinguishing mark on each loaf. Any infraction of this regulation will be punished by fine.

CZECHOSLOVAKIA. — Zákon ze dne 5 června 1930. jímž se vláda zmocňuje, aby zavedla celní přírážky k celním sazbám u některých črulů obilí, muky a mlýnských výrobků, a jímž se zakazuje chemická úprava mouky. — 5 June 1930. — Sbírnka Zákonů a nařízení, S. C., No. 35 (June 1930).

[This law authorizes the Czechoslovak Government to increase the customs tariff in respect of wheat, rye, barley and hay and rye and wheat flours as well as milling products in the event of the average price of these products during a period of three months being less than the average price on the Prague exchange during the period 1925-1929. The average price of goods of native origin, calculated on the basis of the parity of the exchange is diminished by 4 %. The increase must be fixed on a level equal to the difference between the average price for the quinquennial period and the average price for the three months in question ; but the Government is not authorized to increase the tariff by an amount greater than the amounts specified in the law for the tariff items in question.

The tariff is expressed in Czechoslovak crowns without fractions, but if the average price after the expiry of three months is modified to the extent of one crown at least, the tariff in question shall be revised. The law in addition forbids any chemical treatment of flours effected with the object of improving their appearance and punishes each manipulation for changing the natural appearance of flours.

The provisions of this law may not be changed by commercial treaties].

* * *

[A Decree dated 26 June 1930 regulates the application of the above law. It gives precise directions as to the method to be used in calculating the average price of wheat, both home and foreign, as well as that of wheat and rye flours, on the basis of the quotations on the Prague exchange for the period 1925-29.

The Prague exchange is required to forward to the Ministry of Agriculture on the last day of the principal operations effected in each calendar month the calculations of the average prices and to indicate the variations in the average prices of the 1925-29 period and of the three months in question. The data will be published by the competent Ministries.

The Decree, in application of the provisions prohibiting the chemical treatment of flours, authorizes the Customs Bureau to take samples of flours and submit them to the control of the different scientific stations specified in the Decree].

UNITED STATES OF AMERICA. An Act to suppress unfair and fraudulent practices in the marketing of perishable agricultural commodities in interstate and foreign commerce. 10 June, 1930. (*Public* — No. 325 — 71st Congress 1930).

[The purpose of this Act is to prevent abuses in the trade of perishable agricultural products chiefly by the action of commission merchants who " discard, dump or destroy

without reasonable cause any perishable agricultural commodity received by such commission merchant in interstate or foreign 'commerce'. The Act also includes under the general definition of "unfair conduct" on the part of brokers such offences as making fraudulent charges in respect of such products, rejecting or failing to deliver perishable goods in accordance with the terms of the contract without any reasonable cause, or making for a fraudulent purpose, any false or misleading statement concerning the condition, quality, quantity or disposition of, or the condition of the market for, "perishable commodities". It is also made an offence to misrepresent by word, act or deed the state or country of origin of these products or remove, alter, or tamper with any card, stamp, tag etc. placed upon any container or railroad car if it contains a certificate given by a Federal or State inspector as to the grade or quality of the product. Sec. 3 of the Act requires that in future all commission merchants, dealers or brokers must have a license issued by the Secretary of Agriculture. Persons who consider themselves to have suffered damage from the action of brokers are entitled to lodge a complaint to the Secretary of Agriculture who shall if he thinks fit call upon the broker to answer the complaint or else have such complaint investigated. If the Secretary of Agriculture comes to the conclusion that the complainant has been damaged he shall determine the amount of such damage and order the offender to pay this amount. In the event of a broker failing to obey this order the complainant may sue him in the District Court. The Secretary of Agriculture has the right to suspend and in serious cases to revoke the licenses of brokers violating the provisions of this Act]

SUDAN. — The Land Acquisition Ordinance 1930, No. 8 of 1930. *Sudan Government Gazette*, No. 434 (20 August 1930).

[The purposes of this Ordinance is to define the conditions on which the Governor General or the provincial Governors may acquire land "likely to be required for any public purpose". When it appears to the Governor General that such 'likelihood' of land being required for public purposes has arisen a notice to that effect shall be published in the Sudan Government Gazette and the substance of it posted up at convenient places in the locality. When this has been done duly authorized persons may enter upon the land and make any surveys, borings, etc., to ascertain whether the land is suitable for the objects proposed, and may further "set out the boundaries of the land proposed to be taken and the intended line of the work proposed to be made thereon". In the case of courts and gardens a seven days' notice must be given to the occupier while compensation will be paid for damage done. If the Governor General decides to acquire the land a notice to that effect shall be published in the Sudan Government Gazette giving a description of the land and its approximate area. This shall be followed by the appointment of an expropriation officer who shall publish and post notices announcing the acquisition of the land and calling upon all persons claiming compensation to appear and state particulars of their claims for compensation. Representatives shall be appointed in the case of land subject to village or tribal rights from amongst the holders of such rights and likewise a representative may be appointed for absent or minor heirs. Chapter III of the Ordinance deals with the assessment and payment of compensation. The expropriation officer shall attempt to come to an agreement as to the amount of compensation with those persons interested who appear in person or by agent. The board of arbitration shall consist of the expropriation officer as president and two members, one to be appointed by the Governor and the other by the persons interested. In the case of these persons failing to agree the second member shall be appointed by the expropriation officer. Precise rules for the assessment of compensation are given. The Board

is to take into account the market value of the land, the damage sustained by the owner by reason of the acquisition injuriously affecting his other property or his earnings, whether the expropriation has involved his changing his residence, etc. The award of the Board shall be in writing signed by those persons who concur in it and shall state the amount of compensation. The Governor has power to elect to compensate the persons interested by granting them land instead of money. In this case the award must give full particulars of the land so granted.

Chapter IV gives powers to the Governor General also to occupy any waste or cultivated land for a period not exceeding seven years. "The rent payable to the owner shall be fixed by an expropriation officer and the provisions of the present Ordinance relating to the permanent acquisition of land and payment of compensation shall so far as possible apply to cases of temporary acquisition. After the expiry of one year the Governor has power to terminate the contract but the Government shall pay for any damage caused by occupation. In cases of emergency the Governor General may proceed to the permanent or temporary acquisition of land within seven days from the publication of the declaration of acquisition without awaiting the award of the Board as regards compensation. Chapt. VI of the Ordinance lays down that "where the Governor General is satisfied that any person who is desirous of obtaining the use of land, proposes to make use of such land for a public purpose or to develop such land in such a way as to promise material benefit to the public generally or to the persons residing or owning land in the neighbourhood, the Governor General may acquire such land in like manner as if the land was being acquired for a public purpose and as a condition of such acquisition may impose such terms as to the use of such land and otherwise on such person as he thinks proper".

The present Ordinance repeals the Land Acquisition Ordinance 1903 as amended by the Revision Ordinance 1906, the Land Acquisition (Amendment) Ordinance 1916, the Land Acquisition (Amendment) Ordinance 1921, and section 7 of the Revision Ordinance 1926].

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INTERNATIONAL REVIEW OF AGRICULTURE

PART II

MONTHLY BULLETIN

OF

AGRICULTURAL ECONOMICS AND SOCIOLOGY

ECONOMIC AND SOCIAL CONDITIONS OF AGRICULTURAL CLASSES

The Agricultural Crisis and its Effects on the Small Farming Class.

The following is a study on the agricultural crisis, contributed by Prof. MÜNZINGER, Director of the Institute of Rural Economy at the Hohenheim Agricultural College. The author has made a special study of the social and economic conditions of the small or peasant farm, his investigations extending over a part of Southern Germany. In subsequent numbers of this Review further contributions will appear on these same problems. The questions here outlined, such as the exacting nature of the work performed, the scanty remuneration obtained for its performance and in consequence the disinclination felt for farm work and the result in the rural exodus, are by no means new, but they remain questions of immediate interest for to-day and for the near future. During the last ten years very great changes have taken place all the world over in agriculture as regards methods of production and in the organisation of farming undertakings, such changes being partly a consequence of and partly contributory to the agricultural crisis. Rationalisation and mechanisation of agriculture have not yet attained full development and application, but it is now an established fact that this movement will undoubtedly lead to a fundamental transformation of agriculture. Mechanisation originated in the overseas countries, and it has proved impossible for a variety of reasons to carry mechanisation of production to the same point in the old countries of Europe. On the other hand it has long been recognised that there must be mechanisation in those countries also, if their agricultural production is to compete with that of the great overseas farm undertakings. Prices of the typical mass agricultural products, such as cereals, are now largely ruled by this overseas production, and moreover the reward of labour, in the case of the great majority of the farming class, is largely affected by the proceeds obtained for the output of these mechanised farm undertakings. There can however be no doubt that on the greater number of the small farms in Europe the possibilities for a more remunerative organisation of production have not yet been fully tried out, and that it will also prove practicable by appropriate organisation and by the adaptation of the farm machine industry to the requirements of the small farmer to widen the application of mechanisation on the European farm. Within certain limits the small farm can avoid the pressure of prices by changes in production. At the same time the question is constantly being asked and

not without a very real anxiety, what will be the effect upon the small farm of this crisis and this transformation of agriculture. The small farm is of significance not merely from the standpoint of the technique of production of productivity and the satisfaction of the food requirements of humanity. Other determining considerations must enter, viz., these of a social and demographic character. Whatever importance is attached to these, on one point all are unanimous: the farm must be maintained in a sound position, the life of the countries of the older civilisation of Europe depends on the farm. As regards the best means for assisting the small farmer in his struggle for existence, there is still a great divergence of view in the different countries. The main fact is that we know too little of the actual conditions of the small farm. The time has come for a more thorough exploration of its problems

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The statement is often met with in the press that the agricultural crisis does not greatly affect the general farming class, but that it is mainly the large scale capitalistic farming which is suffering. This view is based on the idea that the farmer is in the main farming for his own subsistence and is therefore but little affected by the reduction in market prices and also that the necessary work on the farm can be done by himself and hence he has no wages bill. In fact on this theory he pockets the net return of his farm and in addition all that the large farm has to pay out in wages.

There is little agreement between such views as these and the complaints of the ordinary farming class over their hard lot, especially over the fact that there is no meeting any expenses and that it all but impossible to secure interest on capital invested or even to pay back borrowed capital.

This question certainly cannot be satisfactorily elucidated by a mere superficial inspection of villages. Even an enquiry made among the farmers yields little result, especially if the enquirer is not well known in the village. On the one hand the small farmer does not keep any full records of his returns, and on the other from innate distrust of the stranger he will scarcely give a correct reply in regard to his circumstances. He does not even do so to his neighbour. In fact the worse his circumstances are, the more reserved he becomes. Above all the farmer is determined that no one shall notice his poverty, and he will try to hide it so long as that is possible.

If anyone wishes to inform himself seriously and without prejudice in regard to the actual situation of the farming class, let him make observations of the younger generation of the farm family. Quite contrary to all expectation, contrary to the pride which formerly characterised the farming class it will be found that the younger people are increasingly engaged in factory work, with which previously the young peasant or the farmer's daughter would have nothing to do.

Formerly the only world of the farm family was the farmhouse. The idea of going out into the world, of leaving the soil of their forefathers, of trying to find less arduous and more remunerative work, is the last to occur to the farmer of the old school. Rather than entertain such an idea he would willingly work harder and save more. No closer union exists than between the farmer and the soil on which he works and lives.

In this conception of life, in this close dependence on the soil, and in the constant striving to get on, the young people of the farm have up to now been nurtured. It was thus a matter of course that the sons and daughters should devote their lives also to the agricultural calling which was in their blood and to which they had been accustomed from childhood.

It would often however fall to the second or third son and the daughters of the farmhouse, even apart from any particular desire so to do, to contribute to the family income by supplementary earnings. They found occupation in some craft, in a military career, in the teaching profession, on larger farms, and sometimes also in a University career. Many families of the official class, or having ministers of religion or physicians among their members originate in the first or second generation from the farmhouse. From the farming tradition come their close link with nature, their sound outlook on life, the absolute sense of duty and their habit of thrift. Hence it has not been difficult for them on the basis of such an attitude towards life to mount rapidly into high social positions and to hold their own there. It was the fresh influx of the rural strain which in the struggle for existence with the already deteriorated strain of the town bred was easily the winner.

Hence the effects of the agricultural crisis appear most markedly in the rural exodus, in the departure from the traditional vocation, frequently as the result of a certain aversion from the farming calling. Within the home itself it would be repeated by the parents often enough in the course of the year that in spite of all the weary toil and all the parsimony it was impossible to make ends meet, that the farm scarcely brought in the bare necessities of life and that it is all one can do to maintain oneself on a farm once there are debts to be met.

Thereupon slowly but surely disintegration of the farming class comes about within the family itself. Father and mother, possibly the eldest son as the heir and one daughter work on the farm, the remainder of the family work in the factory with a view to earning ready money, and also often because the factory work with its secure wage, its short working hours, its leisure time is more agreeable than farm work. If the farmer and his wife still have authority with their children and can check any signs of revolt, so long as they are all living under the parental roof, this may be a working arrangement. But if, as is almost inevitable, this authority breaks down and the contest between the two outlooks is fought out in the farm house itself, it becomes a different matter. The part of the family which works on the farm labours from morn to night, and goes at last wearied out and discouraged to bed, while those of the family who are independent of the farm have their short working day and come home, put on their best clothes and go out to amuse themselves, as well they may with their wage and their outlook on life. Such breaking away from tradition is still the exception, and in most farm families the father still demands assistance in both farm work and cash from those members who work outside the farm, but the influence of their companions at the factory leads to their chafing against this parental edict and when that happens those who have remained on the farm also become impatient of the farm work. The result is a danger of a general collapse of all that was formerly inherent in the farming stock of traditional culture, health, strength, love of home, attachment to the land, and deep religious feeling.

Nor is this surprising. No class of workers can endure, without embitterment and consequent disorganisation, a persistently unsatisfactory remuneration of labour and continual pinching as regards the barest necessities of life, without any hope of better times to come. The farming class has always known how to meet the lean years and crises by further curtailment of the demands it makes on life, at no time very great. Thrift to the point of privation has always been its best weapon and in this compulsory adaptation of life to the farming returns is found its greatest advantage over the larger farm. It is thanks to this power of adaptation that the small farm up to now has won through times of pressure of poverty.

It cannot however be expected that the peasant farmer will indefinitely maintain

this extreme simplicity of standard of living, nor can it be supposed that this must remain all he asks or requires of life. Even he prefers good years with all their potentialities to lean years with their deprivations, and if at last in face of continued hard times he gives way to despair and bewails his lot, in comparison with other classes of workers, there is small blame to him.

At the same time it should not be urged that all the distress among the farming class is due to the agricultural crisis. It cannot be denied that there are also farms on which a certain unprogressiveness in methods, a tendency not to move with the times, have brought the crisis to the pitch of a catastrophe.

Unfortunately the whole position described is also characteristic of the well managed farms, which cannot be charged with unprogressiveness, and hence it is reasonable to maintain that it is primarily the agricultural crisis which is slowly driving the farmer from his soil.

The fundamental fact of the agricultural crisis is the wholly unsatisfactory remuneration at the present time of the work of farming. This is a result of the unfavourable relation between prices of farm requisites and those of products, the so-called price scissors. The effect of this is that the farmer has practically no ready money and in consequence he has to abstain from any expenditure even such as would increase the output of the farm. He becomes more and more disposed to regard every mark not spent, under any circumstances, to be a mark saved, even though as a result of this false economy the output suffers.

His one endeavour is to obtain good returns by his own labour and that of his family, because he takes the view that this factor in production costs nothing. Anything for which he need not pay actual cash is in the eyes of the farmer of no cost. It is very difficult to make clear to him that on this theory all other factors of production which are subsidiary to labour and ought to lead to a higher return will be reduced to a minimum and in consequence a great part of the skill and of the time spent in working goes for nothing at all.

Even if it would be made clear to him, he would probably reply . " Where am I to get money for purchase of fertilisers, concentrated feeds and farm machines ? I cannot borrow, as my farm does not bring in enough to pay the interest that would be asked ". Hence the farm inevitably goes from bad to worse the longer the years of poor crops and unfavourable conditions of production go on, and the result of the farmer's work suffers slow depression to vanishing point.

The investigations of the writer show that on many farms the wage claim of the family and that of the farm servants, if there are any, amounts to 75 per cent. of the total expenditure, while on normally managed larger farms this proportion may be fixed at from 40 to 45 per cent. It is obvious that the remaining 25 per cent. is not enough to pay for the equipment required to supplement and assist the actual labour.

The factor which in Southern Germany particularly tends to reduce the return from farm work, whenever measured by time, is the hampering waste of energy, which results from the irrational parcelling of the property and the wide dispersion of the single parcels, as well as often also from the unsystematic arrangement of the dwelling house, the farm and the stabling. In Württemberg there are communes where the average size of a parcel is 9 ares and where a farm of 10 hectares consists of 40 to 50 parcels, and yet there is a strong prejudice in many districts against consolidation, and similar division by inheritance goes on none the less. It is incomprehensible that so many farmers do not see that they are sawing off the branch on which they and their children are sitting.

The tendency of modern economic life is towards co-ordination, and all endea-

your is directed at attaining better results by such means ; the farmer alone dissipates his energy and reduces the return from his labour by constantly worsening the conditions under which he works.

A reproach which cannot be levelled at the German farming class is that they are lacking in the necessary industry. The day's work usually begins at sunrise and goes on till nightfall. In the course of investigation it has been found that on an average 3554 hours in the year are worked by a man and 3933 by a woman on the farm, the maximum being 4075 for the man, and 4284 for the farmwoman. Perhaps a better idea of this complete absorption of the time of the farm family is to be gained from the consideration that with 300 working days and 3900 hours of work the length of the working day is on an average throughout the year 13 hours, and that the rates of pay of landworkers in Württemberg are reckoned on the basis of 2900 hours of work per year for a farm servant.

What then is the earned outcome of this backbreaking toil ? Either the wages of a farm hand, if two and a half per cent. interest on the capital invested in the farm is all that is looked for, or a wage which is less than that of a farm hand if five per cent. interest is required. Moreover the wage of the farm servant too is essentially below that of the factory hand.

The farmer who is perforce resigned to earning the wage of a farm hand has actually, as things are, in respect to his standard of living, reached or even exceeded the average. He has in addition to bear the whole risk and all the prospect he has in this wage, while in fact the claims he makes on life must often be based on something even less than such a wage.

It is not surprising that under such conditions the children of the farm family show no great desire to stay on the farm. Nor can it be surprising that they endeavour to find an occupation which offers them a better reward for a shorter day's work. Nor that they seek to escape from a life which means nothing but hard work and extreme parsimony. What can be seen daily in the village and even within the family circle of other types of occupation sets up a comparison which acts as an inducement to draw them away from the soil. They are attracted towards some calling that will offer more pleasure in life and more chance of progress than is the case to-day on the farm.

The tendencies leading to the very unsatisfactory return from farming may be divided into those which are set up by external conditions, the general unfavourable economic situation and the agricultural crisis, and those due to the unprogressiveness of the farmers themselves. It is however naturally difficult at times to say where one begins and the other ends. In the interest of our farming class, and also in that of the whole national economy it is incumbent on us to find ways and means which may lighten and render more tolerable the work of the farmer.

One of the first measures to take is the remedying of the waste of energy which entails the absorption of an extraordinarily large proportion of the working day, shown by investigation to amount to 30 per cent. of the whole time. Such a reform should relate to the internal arrangements of the farmyard and the buildings but more particularly to the field work. The great dispersion and unsystematic splitting up of the parcels at the time of succession especially call for attention, as greatly diminishing the net output of the working time of the farm family.

The parcelling of the farmland may be regarded as in itself a canker, apart from all the disadvantages which the multiplication of boundaries entail. The remedy is either the voluntary exchange of parcels which in view of the whole attitude of the farming class seems unlikely to work well or better a thoroughgoing consolidation of holdings. The ideal from the technical point of view is and remains the isolated

farm with the farm buildings in the centre ; but this is not practicable in the village communes. What however is practicable is the formation of larger single parcels which allow of mechanical cultivation, or the employment of tractors instead of the more costly draught horse, the use of which is far from satisfactory on many farms.

The problem is of exceptional difficulty, the greater because the farmer is inclined to regard such measures as an encroachment on his rights of ownership. Undoubtedly the idea of ownership is the one in which lies the value of the farm economy. Under no circumstances should it be attacked. At the same time it seems essential that large scale trials should be carried out in this respect, so that the effect of this type of farm management on the return from farm work may be tested, and that the farmer may see that he is making an advance in the direction of the co-operative utilisation of machines

The writer has himself made the experiment of leading the way in this respect in a farming village and the centre thus formed will it is hoped prove one which will have imitators, although whether the result will be as anticipated it is impossible now to judge. Such experiments have to be carried out not merely on dead material, nor even on the docile and manageable farm animal, but on a much more difficult medium for experiment, the farmer himself

CREDIT

The National Consortium for Agricultural Improvement Credit in Italy.

The main lines of the new system of agricultural credit, as approved by the Royal Decree Law of 29 July 1927, No 1509 (1), have already been given in some detail in this Review (2). This measure provided for complete reorganisation of the credit system and set up, so as to carry out the reform throughout Italy, a financial and technical organisation designed to ensure for investments in favour of agriculture a flow of capital adequate to modern requirements. This organisation involves the foundation of ten regional institutions, with the function of "co-ordination, direction and consolidation", in respect of credit for working capital and for minor improvements, and local credit facilities, and in addition the constitution of a National Consortium for Agricultural Improvement Credit (*Consorzio Nazionale per il Credito Agrario di Miglioramento*), with the essential function of supplying funds for large scale land improvements and for the more important reclamation and irrigation operations. It is intended here to indicate briefly the structure, system of working and first results of this Institute.

The Consortium was established with head-quarters in Rome in December 1927, and membership includes the State, the Bank of Naples, the Bank of Sicily, the more important popular and agricultural banks, the Credit Institute for the Savings Banks, the National Fund for Social Insurance, the National Insurance Institute, the National Bank of Labour, the principal savings banks of the Kingdom, the regional institutions of agricultural credit, some other institutions of land mortgage credit and insurance societies.

The specific function of the Consortium is to consolidate the work undertaken

(1) Transformed into the Law of 5 July 1928, No 1760 and amended by the Royal Decree-Law of 29 July 1928, No 2085.

(2) September 1927 and March 1928.

by the regional agricultural credit institutions in respect of improvement credit. These institutions, in fact, may and do provide improvement credit in addition to credit for working capital, but confine themselves to the smaller operations. Any attempt to cover a wider field of action might lead to a tying up of capital which would embarrass their main activities, and hence it falls to the Consortium to undertake all the operations of credit for land improvement and reclamation which for this reason cannot be undertaken by the local institutions (1).

The capital of the Institute consists of shares held by name and taken up by the participating bodies of 500,000 liras each, the number being unlimited. The liability of the participants is confined to the extent of the shares taken up by each. This capital amounts at present to 270,000,000 liras, and is utilised to initiate operations and especially to provide guarantee for the interest bearing bonds and debentures which the Consortium is empowered to issue, the former for a sum double the capital and the debentures for a sum corresponding to eight times the capital; in this way it is possible to undertake operations up to a total of about two milliards and a half of liras.

The administrative structure of the Consortium is simple and not costly: it is under the management of a Council, composed of nine members elected by the general meeting of the members. This Council, *inter alia*, fixes the conditions for assigning of loans and rates of interest on operations whether of credit or debit. Some part of its powers may be and is delegated to an Executive Committee consisting of the chairman, vice-chairman and four members of the Management Council.

The terms of constitution provide that persons of "proved capacity" must be called on to take part in the official work, and that the Agricultural Technical Office and the Loans Office -- to both of which all questions of loans must be submitted for examination -- should make use of the services of advisors chosen in the one case from persons of legal standing with special knowledge of land mortgage credit questions and in the other from persons with expert knowledge of general and local conditions of Italian agriculture.

The net profits shown on the balance sheet are (a) assigned up to a proportion of 20 per cent. to the reserve; (b) placed up to a proportion not exceeding 10 per cent. at the disposal of the Management Council to be given as bonuses or grants in aid to the staff, or for enquiries and subsidies for the progress of agricultural technique and for the increase of the national agricultural resources; (c) the remaining portion is employed for paying a dividend to the member bodies at a rate not higher than the average in the year of the official rate of discount. Any surplus is passed to the fund of reserve. If the event of a year closing with a loss, the net profits of the subsequent years will be devoted to recouping the loss, before payment of any dividend to the organisations forming the consortium.

The Consortium is represented locally by the regional institutions and the National Bank of Labour. This representation is conditioned by certain agreements in accordance with which the limits are fixed in respect of the amount up to which the separate operations are carried out by the regional institutions and beyond which they come within the competence of the Consortium. These limits, allowing for special arrangements in any case, are as follows:

(1) It may be noted that in addition to the regional institutions and the National Consortium other bodies are empowered to carry on loan operations for improvements, *viz.*, the Agricultural Credit Section of the Mortgage Credit Institute of the three Venetian provinces and the National Bank of Labour. Loan operations limited to certain zones (the lower Po valley) may be carried on by other institutions with State aid in respect to payment of interest.

Lombardy : Agricultural Credit Section of the Savings Banks of the Lombard Provinces	300,000	liras
The three Venetian Provinces: Agricultural Credit Section of the Federal Institute of the Savings Banks of the three Venetian Provinces	300,000	»
Southern Italy (mainland) : Agricultural Credit Section of the Bank of Italy	300,000	»
Sicily : Agricultural Credit Section of the Bank of Sicily	300,000	»
Tuscany : Federal Institute of Agricultural Credit for Tuscany	200,000	»
Piedmont : Federal Institute of Agricultural Credit for Piedmont.	100,000	»
Liguria : Agricultural Credit Institute for Liguria	100,000	»
Emilia : Agricultural Credit Section for Emilia and Romagna at the Savings Bank of Bologna	100,000	»
The Marches, Umbria and Latium : Agricultural Credit Institute for Central Italy	100,000	»
Sardinia : Agricultural Credit Institute for Sardinia	100,000	»

The technical arrangements made by the Consortium for its credit activities are of interest. Applications for loans submitted through the institutions represented reach the Consortium after a preliminary examination undertaken by the local organisation. The Consortium depends on the local organisation for the ascertainment of facts and estimates while retaining its right to pass final judgment on the proposed operations and on the financial assistance to be given. The Executive Committee decides on loan applications up to sums of three million liras: the Management Council provides for loans of higher value. In connection with every proposed loan operation, both a technical and a legal enquiry are held. A preliminary technical enquiry is usually made, as has already been said, by the representative institutions whenever it is not felt to be necessary to have recourse to the recognised experts of the Consortium. The final enquiry is made by the Central Technical Office with the help when required of experts of known value, who are in a position to judge of how far the proposals to be financed correspond to technical requirements and to economic practicability. As soon as the loan is decided on and the conditions fixed, the legal enquiry is held into the whole question, with the help, if need be, of persons of legal standing specially acquainted with the matter under consideration. In this way, it is possible to avoid the cost of legal estimates in the case of undertakings in connection with which the loan applications cannot be approved.

The idea is that the Consortium does not undertake operations for private interest or for remunerative employment of funds but only in order to facilitate execution of works intended to raise the quantity and quality of the national agricultural production. Hence financing for purchase of land or extinction of debts is usually excluded, the action being confined to the subsidising of new works of absolute technical and economic advantage, in which the interest of the individual coincides with the general interest. Generally speaking more attention is given by the Consortium to works of land transformation, where there is either complete absence or very inadequate provision of buildings, roads, canals and plantations, as in the areas of recent land drainage improvements or in those which have been for a long

time under a primitive and desultory cereal cultivation alternating with pastureland or waste. Attention is also given to operations such as irrigation and certain plantations which tend to raise the agricultural level of the farms. Speaking generally, account is taken of the "ruralising power" of the operations to be financed, that is of their tendency to attract labour to and to fix it on the land. In any case the Consortium has to concentrate on works that bring about an assured increase of products, to meet the requirements of the home market or to place on the export market, as well as on such farms as can usefully employ the funds obtained and guarantee a punctual repayment in full. It is to ensure such repayment that at the time of considering the loan application a strict estimation is made of previous debts so as to make sure that the assistance granted will not be thereby rendered useless or even harmful.

The agreement regulating legal relations between the Consortium and farms assisted presents special features, being defined by the law as a loan agreement for agricultural improvements. In the first place the purpose for which the loan is required must be precisely stated; in the next place, the sum loaned is not handed, or promised unconditionally, to the borrower, but it is agreed that advances shall be made gradually in proportion to the progress of the works for the execution of which the loan is granted; moreover such advances are made subject to the ascertainment of the right and proper employment of the sums for the purposes for which they were given, the result being that the total payments may often be less than the sum originally assigned. It may be added that the agreement may be dissolved even during the period of these instalments, all clauses relating to the duration and conditions of the loan operation being in consequence annulled. Two stages of the operation may, in fact, be distinguished; the first, the advancing of instalments of the whole loan, made under conditions intended to ensure the systematic execution of the work in the judgement of the lending institution and the exact employment of the sums advanced; and the second stage, during which the repayment is made over a maximum period of thirty years, on a system of gradual amortisation, by fixed instalments, of the sum actually advanced.

The guarantee regarded as suitable by the lending institution must however be supplied in full from the moment of signing the agreement. This is normally the mortgage, which need not be of the first instance, provided the security value of the lands on which it is raised is sufficiently high. It may accordingly happen that the burden of the charges on lands to be improved may act as a check on the financing of the improvement works, even if planned on most suitable lines (1).

Funds for the operations are to be raised, as previously stated, primarily by the issue of debentures. The assignment of the first series, for a total of 200,000,000 liras, will be effected in full in the course of 1931. On the debenture of this series there is an annual interest of 6 per cent. The interest on money advanced by the Consortium, however, increased by a fixed quota for commission and repayment of Treasury charges, varies between 6.60 and 7 per cent. It may here be noted that the loans for agricultural improvements, in so far as they are granted by the regional agricultural credit institute competent for the area or by the Consortium, enjoy, under the Royal Decree-Law 29 July 1927, No. 1509, a State contribution towards the pay-

(1) Some authorities advocate legislation under which the financing of improvement works may take place even in the cases mentioned. There may be noted the proposal to institute a form of mortgage with special privileges as guarantee for the operations in question. The adoption of special criteria intended to make the proof of ownership less burdensome and difficult is also urged.

ment of interest. The rate of such contribution is usually not to exceed 2.50 per cent. graded in relation to the nature and productivity of the improvements and the time occupied by the operations. This contribution, which perceptibly reduces the rate of interest in favour of the borrower, is in some provinces (Ferrara, Rovigo, Ravenna, Bologna, Modena and Mantua) raised to 3.50 per cent. Generally speaking the rate on the loans is equalled to the minimum amount of the money obtained by sale of the debentures, if effected at par.

The activities of the Consortium were limited to eight months in 1928 but were more extended in 1929 and 1930. In 1928, 244 loan applications were presented for a total sum of 575,090,387 liras, and in 1929, the number was 311 for a total of 520,838,588 liras; taken as a whole the applications made from April 1928 to December 1929 amount to 555 for 1,095,928,975 liras. In the same period the loans granted amounted to 298,225,000 liras distributed as follows as to area and purpose.

	Rural building	Land improvements	Roads	Irrigation plants and electro- irrigation plants	Plantations
	liras	liras	liras	liras	liras
Northern Italy	51,850,000	17,846,000	6,562,000	49,394,000	11,872,000
Central Italy	37,050,000	16,042,000	3,170,000	14,503,000	11,480,000
Southern Italy	28,078,000	9,780,000	7,015,000	18,594,000	15,009,000
Totals	116,978,000	43,648,000	16,747,000	82,491,000	38,361,000

The financial year 1929 closed with a net profit of 1,822,935 liras of which 365,000 liras, or two-tenths, were allotted to the reserve funds, 1,255,000 liras were distributed as divided at the rate of 5 per cent., to the members and the remainder was devoted to the amortisation charges (1).

There are no detailed data in existence for the financial year 1930, still in course but from information supplied directly from the Consortium it is learnt that from 1928 to October 1930 a total of 698 applications reached it for 1,372,000,000 liras, out of which 318 have been approved for 598,000,000 liras, involving loan concessions for 424,152,000 liras. Deducting the applications refused, withdrawn or sent on to the regional institutions, 81 applications for 141,000,000 liras remained under enquiry.

G. C.

Regio decreto-legge 29 luglio 1927, n. 1509: provvedimenti per l'ordinamento del credito agrario nel Regno. *Gazzetta Ufficiale del Regno d'Italia*, n. 197. Rome, 26 August 1927.

Decreto ministeriale 23 gennaio 1928: norme regolamentari per l'esecuzione del regio decreto-legge 29 luglio 1927, n. 1509, sull'ordinamento del credito agrario nel Regno. *Ibidem*, n. 27. Rome, 2 February 1928.

Decreto ministeriale 18 giugno 1928: modificazioni al decreto ministeriale 23 gennaio 1928, che approva le norme regolamentari per l'esecuzione del regio decreto-legge 29 luglio 1927, n. 1509. *Ibidem*, n. 154. Roma, 4 July 1928.

(1) In 1929 the State completed the payment of its quota, equivalent to 18,500,000. The contributions made by the member institutions amount to 251,000,000 liras.

Legge 5 luglio 1928, n. 1660 Conversione in legge, con modificazioni, del regio decreto-legge 29 luglio 1927, n. 1509, *Ibidem*, n. 186, Rome, 10 August 1928.

Regio decreto-legge 29 luglio 1928, n. 2085 modificazioni al regio decreto-legge 29 luglio 1927, n. 1509. *Ibidem*, n. 221. Rome, 22 September 1928

Decreto ministeriale 19 marzo 1928 : approvazione dello statuto del Consorzio Nazionale per il Credito Agrario di Miglioramento. *Ibidem* n. 88. Rome, 13 April 1928.

Consorzio Nazionale per il Credito Agrario di Miglioramento Bilancio e rendiconto dell'esercizio 1929. Rome, 1930-VIII.

Agricultural Credit in India : Rural Credit in Bihar and Orissa.

By a letter of 3 April 1929 from the Government of India to the local Governments a scheme was laid down constituting Provincial Banking Enquiry Committees for the investigation in each province of agricultural credit facilities, marketing of crops with the finance required, the volume of agricultural indebtedness, and means of redemption, and the working of co-operative credit agencies and of indigenous banking. The following is a summary of the principal results obtained by the Provincial Banking Enquiry Committee for Bihar and Orissa, a province with a marked preponderance and high density of rural population.

The three main divisions of the province are : 1. Bihar, the alluvial plain drained by the Ganges and its tributaries, bounded by the foot hills of the Himalayas on the north and by the Chota Nagpur plateau on the south ; 2. Chota Nagpur, a region characterised by fertile valleys, open uplands and wooded hills, lying from 500 to 3,000 feet above sea-level ; and 3. Orissa, or for this purpose the Orissa coast districts, excluding the Orissa Feudatory States which form as it were the hinterland of the whole area known properly as Orissa.

The area and population of these three divisions or tracts are shown as under :

	Area sq. miles	Population (approx)
Bihar	37,000	21,500,000 (1)
Chota Nagpur	38,000	8,500,000
Orissa	8,250	4,000,000

After Bengal and the United Provinces, the province of Bihar and Orissa supports a larger population in proportion to its area than any province of India. The standard of living is the lowest in all India ; the population is far from ethnologically homogeneous, and seven separate languages prevail besides numerous dialects.

The agricultural conditions of the three tracts vary considerably. In both North and South Bihar, the main summer or monsoon crop is rice, and good crops are usually obtained in the north. The most southern part of Bihar frequently suffers from drought and even in normal years the crop depends on irrigation works. In North Bihar, valuable crops of sugar cane, tobacco, etc. can also be grown

(1) The density of the population in North Bihar is 642 and in South Bihar is 502 to the square mile.

as summer crops. The cold weather crops of both tracts, including wheat, barley, millets, pulses, oilseeds, depend on good rains in October and January. There is in fact considerable difficulty in Bihar in supporting the dense population, and seasonal emigration takes place to the adjacent province of Bengal to supply the labour required for the heavy rice harvest there.

In Chota Nagpur, excellent crops of rice are grown in the valleys and extend in good years well up the slopes. On the uplands maize is the principal crop but depends on seasonable rains, and much of the upland soil is poor in character. A large proportion of the plateau is still covered with forest, and lac culture is an important subsidiary occupation. There is a considerable emigration of labour to the tea gardens of Assam.

In Orissa the rainfall is more certain than elsewhere in the province and the soil is on the whole fertile. Rice is the main crop, the area in Orissa under rice being 82.5 per cent. of the gross cropped area, while for the province as a whole the proportion is 45.5 per cent. Severe floods occur every three or four years, owing to the heavy rains over the immense catchment areas of the three principal rivers which flow to the Bay of Bengal across these coast districts. These floods seriously affect crop returns, and are usually followed by a large temporary migration of labour to the mills near Calcutta.

The total value of the agricultural produce raised in the whole province may be estimated at about 120 crores (1) or £80,000,000 sterling in an average season, about 40 per cent. representing the annual value of the rice crop. The cost of raising the total crop is probably not more than half or less than one-third of this value.

The study of the banking problems of this province is thus primarily concerned with a large rural population living mainly by cultivation of the soil, under perhaps more than the usual seasonal risks. Of this population, ninety-ninths are illiterate, in the sense of not attaining to the Census test of literacy, viz., ability to write a letter in their own language and to read the reply (2).

The function of banking in such a province is mainly to provide credit during the growing of the crop, to finance the marketing of the produce not consumed on the spot, and to facilitate the inflow of commodities required for consumption in the villages.

Credit is also frequently applied for to meet demands of creditors, *i. e.*, to pay interest on loans previously incurred or to reduce the total indebtedness. In this connection the Report emphasises a distinction between the two classes of rural borrowers, the smaller and richer class of the *zamindars*, or landowners, who are often very heavily indebted, and the *rai-yats*, or cultivating tenants with occupancy rights (3) who are in the great majority and whose requirements are more usually, though not exclusively, for crop loans and improvement loans. It will be seen later that the Committee were of opinion that a somewhat different provision should be made for the credit needs of these two classes.

The main sources of *rural borrowing* may be distinguished as follows :

(a) *the village moneylender*, *i. e.*, the small capitalist who lives permanently in the village and whose forefathers have, as a rule, for centuries carried on this

(1) A crore of rupees = 10,000,000 Rs.

(2) More exactly, not quite one in ten of the males, and six in every thousand females are literate. The male percentage of literacy for all India at the 1921 Census was 18.3.

(3) By occupancy rights are understood protection against ejection and against undue raising of rent. By custom also the right to sell or mortgage holdings may be recognised.

business. Loans for maintenance during the growing of the crop are often made in kind, generally in rice, and the rate varies from 25 to 50 per cent., being higher where the population is poorer or more ignorant. For seed grain double the prevailing rate is charged, and in any case the rates have to be paid over a period not usually exceeding eight months. If however the price of grain falls before the date of repayment the borrower gets the benefit. Cash loans are given for an indefinite period and the rate in Orissa averages 25 per cent. or a little higher; that for Chota Nagpur and in some adjacent parts of Bihar it is $37\frac{1}{2}$; elsewhere in Bihar the more moderate rate of $18\frac{3}{4}$ prevails. It is clear that poverty and ignorance combined operate to maintain a high rate, while the growth of education and wealth bring it down. On the other hand there seems to be little evidence in this province of the malpractices with which the Indian village money lender is frequently charged. His rates of interest are certainly high, but he seldom presses for early repayment of the principal, he supplies credit promptly and with a minimum of formality and he will even remit a part of his full dues when occasion demands. For the present he appears to be an essential agent in the production of crops. It should be noted however that no link exists at present between the rural moneylender and the urban money market.

(b) *the rural co-operative credit societies* which at the end of 1928 numbered 8,431 with a total membership of 204,565 members and 83 grain *golas*, making loans in kind, with 27,249 members. At the present time these societies do not provide more than 2 per cent. of the total sum required annually by the actual cultivators, which has been approximately estimated at about Rs. $33\frac{1}{2}$ crores. A comparison however of the 1923 figures with those for 1928 shows that membership of these societies has risen by about 11 per cent. a year, and working capital by about 15 per cent a year. If this rate of expansion is maintained, the co-operative credit societies will within 25 years or less fill a much more important place in the rural economy. It will be obvious that members of such societies are mainly heads of families having credit requirements but not so deeply involved in debt as to be outside the scope of an organised credit agency. The potential membership may be reckoned on this basis as about 4,750,000 heads of households, the actual membership of the agricultural credit societies, being as stated, approximately 232,000 or 5 per cent. of the potential. Fuller details of the working of the co-operative societies will be given later.

(c) The *shroff*, or indigenous banker, is a historic and important figure in the province. He is an individual who is able, in virtue of his financial position and known discretion, to attract deposits and to draw bills of exchange (*hundis*) which are readily accepted and discounted on the market. He is often the adviser as well as the banker, and his methods are informal and personal, most transactions being oral. While an essential element in the banking of the province, the shroff is now usually also a trader, supplementing in that way the somewhat uncertain income derived from his moneylending business. His activities of the latter kind are mainly confined to the towns, and the main contact of the shroffs with agriculture is either in so far as they finance the rural moneylender (*mahajan*), or as they advance money to zamindars or well to do raiyats who can afford to make the journey to the towns.

(d) *Government loans*, made under two different Acts, the Land Improvement Loans Act, the benefits of which are mainly confined to proprietors, and the Agriculturists' Loans Act. The operation of the latter Act in this Province has been restricted to meeting drought or flood emergencies. In respect of these loans, known as *takavi*, two suggestions are made: 1. that repayment might be spread

over the harvests of two years following the calamity, with possible extension to a third year, instead of repayment being ordinarily required after the next main harvest, or exceptionally after two harvests; 2. that the provisions of the Act should be extended to cover replacement of brood lac, as is sometimes necessary after very unfavourable weather and always entails considerable transport expenses.

The extension of the Agriculturists' Loans Act to cover normal circumstances is not regarded as advisable, as it would be impossible for Government to provide the whole of the annual loan requirements and any partial provision in competition with other agencies is undesirable.

The general subject of banking is too wide for full discussion here, but it may be briefly stated that the question of agricultural credit is affected, as is that of industrial credit, by a radical defect in the banking system of the province, viz. the want of cohesion and the absence of a free flow of funds between its elements. On the one hand the western banking agencies, the Imperial Bank, the co-operative banks, the post-office and insurance companies attract deposits but either do not lend or, as is the case with the co-operative banks, are restricted in their lending powers. On the other hand the indigenous bankers are the chief lending and financing agencies, but mainly owing to the establishment of the western agencies do not command deposits to any large extent, nor have these bankers at present any access to the surplus of the other element of the banking system. A proposal for removing this barrier gradually by improvement of the status and position of the shroffs or indigenous bankers, while offering inducements to them to develop their banking rather than their trading relations is among the proposals of the Banking Enquiry Committee, and it is considered that in this way a more effective "financial irrigation of the agriculture", together with the trade and industry of the province would be brought about.

As regards rates of interest charged on Government loans or by the co-operative societies, Government loans are made at a rate of $6\frac{1}{4}$ per cent. Co-operative societies offer rates of interest which in comparison with those of the village moneylenders are half those prevalent in Chota Nagpur, five-eighths of those in Orissa and three-quarters of those in Bihar. All these rates of interest refer to borrowing by the *raiyats* or ordinary cultivators. The *zamindar* or landlord can borrow at a lower rate, 20 per cent. being the average in Orissa, 18 per cent. in Chota Nagpur and $12\frac{1}{2}$ per cent. in Bihar. This class also borrows from the urban moneylender, but even so about half the debts of zamindars are owed to rural moneylenders in Orissa and Chota Nagpur, and about three-quarters in Bihar.

For any scheme of improvement of agricultural credit facilities an estimate of *indebtedness* is essential, that is to say, it is necessary to ascertain the actual indebtedness of a sufficient number of individuals, sufficiently widely dispersed in the Province. The method adopted here was that of surveys, conducted in a number of villages, by officers of the executive service, co-operative officials, persons connected with the co-operative movement and students of economics. It is of course essential to command the confidence of the individuals questioned, and it was felt that the best method of ensuring this was to enlist the services of persons of the types indicated and ask them to conduct surveys in villages where they lived or where they already had some local influence. Use was made of a very simple questionnaire translated into the vernacular, and distributed to the leading men of a village in advance of the oral investigation. In this it was explained that the object of the Government was to improve in every possible way the condition of the *raiyats*, and that for such purpose it was necessary to know how money is

obtained for cultivation expenses, improvements and other needs, how the produce is sold, what is done with savings and finally how much is owed. In regard to this last point, the investigators endeavoured to obtain answers from all the households of a village, including those unlikely to have debts. Enquiries were also conducted directly by the Committee over a smaller number of centres and with deliberate exclusion of the landlords and the labourer class and the results used as a check on those of the investigators.

It was realised that the landlord class, which is only about one per cent. of the whole population of the province, could not be satisfactorily reached by the village surveys, and accordingly a separate and confidential enquiry was conducted into the indebtedness of landlords, defined as persons returned in the Census as deriving income from the rent of agricultural land, through the medium of the electoral rolls. This enquiry was attended with considerable difficulty and an approximate degree of precision only is claimed for the results, but it is clear that this small class is very heavily indebted as compared with the ordinary cultivator.

The following table shows the approximate results of these enquiries :

	Bihar	Chota Nagpur	Orissa coast districts
Rural households (<i>in thousands</i>) :			
ordinary cultivators	2,567	1,204	407
landlords.	45	5	8
others.	1,303	429	317
Number of households (all types) investigated by village surveys	3,617	3,077	2,710
Average indebtedness per household as obtained by survey Rs.	282	92	73
Average indebtedness of landlords as obtained by special enquiry. Rs.	4,000	11,000	800
Total indebtedness in <i>crores</i> (10 million rupees) Crores	127	21	7

Hence the total indebtedness of the province may be placed at 155 crores of which some 24 crores may be put down to landlords, 129 to the ordinary cultivators, and 2 crores to others.

It should be added that the range of indebtedness is very considerable and the figures showing proportions of the rural population indebted in various degrees are of interest. Taking the investigators' figures only as the more general the following are the percentages of households falling within different categories.

	Bihar	Chota Nagpur	Orissa
Free from debt	27.5	26	29
Lightly indebted, fr. Rs. 1 to 105 . .	29	57	54
Moderately indebted, fr. Rs. 106 to 210 .	14	8	10
Heavily indebted, fr. Rs. 211 to 1,050 .	24	8	6.5
Very heavily indebted, above Rs. 1,050 .	5.5	1	0.5

The proportions of indebtedness in various degrees for the landlords may be summarised as follows :

	Bihar	Chota Nagpur	Orissa
Free from debt	35	40.5	50
Lightly indebted Rs. 1-945	17	18.5	35
Moderately indebted Rs. 946-6615 . . .	33	27	12
Heavily indebted Rs. 6615-25,000 . .	10	10	2 5
Very heavily indebted Rs. above 25,000	5	4	0 5

An attempt was also made to estimate indebtedness by means of an enquiry addressed to the central co-operative banks in respect of the members of agricultural credit societies affiliated to them. It has already been mentioned and may here be emphasised that the members of such societies are as a rule drawn from those elements in the rural population as are usually in need of credit but are not hopelessly involved, roughly in fact from the three middle classes as shown above. Hence the averages of indebtedness resulting from the figures given by the banks replying to the enquiry tended to be unduly high in comparison with the results obtained by the investigators, owing to the relatively high percentage of households free from debt in the different divisions of the province.

The various enquiries above referred to were made between the end of August and the end of November, and hence at the time of greatest indebtedness, since the main crop of the province, rice, is not ready for marketing until December. In other words it is during that period increased by the amount of the annual borrowing. It is estimated, though again only as an approximation, that the annual borrowing of the ordinary cultivator forms about one-fourth of the total indebtedness, the annual repayment in March or April being roughly equivalent to the annual borrowing.

In regard to the *purposes for which debt is or has been incurred* there is a want of agreement between the reports made by the investigators and the figures supplied by the Central Co-operative banks. It may be remembered that the co-operative organisations make a definite and on the whole successful attempt to restrict loans to the more productive purposes, and there can be little doubt that their members have recourse to other credit agencies to satisfy their need for unproductive loans. Loans taken for one purpose are undoubtedly also sometimes diverted to another.

Approximately it would appear that about 30 per cent. of the total borrowing is for repayment of earlier debt and interest thereon. Borrowing for social ceremonies probably accounts for 20 per cent., although a much lower percentage is shown by the co-operative banks. Nearly half the debt is thus incurred for unproductive purposes. About 15 per cent appears to be borrowed for maintenance, although here again the co-operative figure is lower, probably because there is usually some delay in granting loans by co-operative societies, whereas promptitude is the first requisite with loans for maintenance purposes and accordingly they will be sought elsewhere. Loans for cultivation amount to 7 to 8 per cent., and like loans for maintenance are part rather of the annual borrowing than of the total indebtedness ; loans of seed taken in kind are usually repaid out of the next harvest. The co-operator seems to borrow more (13.5 per cent.) for purchase of cattle and

improvements than does the general population. Among the remaining items borrowing for trading purposes and for purchase of land are the most important. It is perhaps significant that loans for education are practically nil.

The most important single cause of the existing indebtedness is earlier borrowing, and the constant reborrowing for this purpose is probably to be accounted for by the high rates of interest charged on all borrowing. To quote the opinion of the Banking Enquiry Committee which is partially based on the failure of an experiment made in Chota Nagpur from 1906 to 1912, "it is exceedingly doubtful whether redemption of existing debt, *unless it is preceded or at least accompanied by a substantial reduction of interest rates for current borrowing*, will confer any permanent benefit on the peasant".

The survey of the rural economy of the province made by the Banking Enquiry Committee necessarily included the *marketing of its agricultural products* and the method of financing such marketing. It will be realised that the great majority of cultivators grow for sustenance and not for sale. For example of the rice crop, which represents 43 per cent. of the total annual crop production of the province, 60 per cent. is consumed by the cultivators without any marketing at all. Another 29 per cent. never goes further than the local rural markets which are held at places about six miles apart. The remaining 11 per cent. goes to feed the town population or for shipment outside the province. About half the quantity grown of *gram* (a kind of chick pea), other pulses and food grains, appears to reach the larger or urban markets, and a very small percentage only exported. On the other hand a larger proportion of oilseeds and of sugar is exported, while very nearly the whole crop of jute is exported and the same is true of lac. Transport of rice or similar commodity is mostly effected by pack-bullock or pony to the local market, sometimes by the producers, more often by small traders (*beparis*), then by cart from the local markets to the towns, and so if necessary to the rail. Not more than three middlemen are engaged, the small trader, the dealer and the town merchant, and it has been shown that taking into account the high rate of interest on capital and warehouse charges, the profits of these middlemen are not in any way excessive. As regards sugar, the growers often combine to crush and boil their own cane, the *beparis* collecting the products and selling to the confectioners of the district or else to the exporter to Bengal, Madras or the Punjab. There are in addition a number of factories which buy the cane direct from the grower, and frequently make advances to ensure the planting of cane and its delivery to themselves.

The marketing of jute appears to be largely directed by the buying firms who purchase from the growers either through commission agents or co-operative societies. Lac, also a commercial product, is on the other hand marketed through the local market in the first instance. There is a considerable amount of speculation in the lac trade, as the prices fluctuate widely.

On the whole the present system of marketing crop products is satisfactory. There is little evidence to show that intermediary charges are too high, or that the producer of a commodity is not well informed in regard to prices. The defects of the existing marketing system lie rather in the credit machinery, and are due to the absence of licensed warehouses and the infrequent use of negotiable instruments of credit. Some of the existing warehouses or *golas* (of which there are large numbers) will lend money on the stored grain but either do not or cannot issue a properly negotiable documented receipt or warrant, which can be sold or used as security for advances with banks or other credit agencies. The introduction of such documented agricultural bills, for, say, six months usance, which could be issued by licensed warehouses administered, say, by railways, co-operative societies or banks, is

recommended as likely greatly to facilitate marketing operations and also generally to assist the free flow of banking funds in the province.

Before concluding with the general recommendations of the Committee, their appraisal of the *co-operative agricultural credit system* may be summarised, as also the proposals for *land mortgage banks* intended to meet the credit requirements of the landlord class.

Of the primary co-operative societies in Bihar and Orissa by far the most important are the agricultural credit societies. Their number in 1928 was 8,431 with a membership of 204,565, out of a total of 8,905 primary societies with 255,337 members. The working capital of these 8,431 agricultural credit societies was in 1928 Rs. 23,400,000 (Rs. 2.34 lakhs) (1) and loans to members approximately Rs. 6,300,000 (Rs. 63 lakhs), with outstanding loans of Rs. 1.97 lakhs. The 83 *krain golas*, which are credit societies with limited liability making loans in grain, lent Rs. 136,000 in 1928, with outstanding loans of Rs. 262,000. The working capital of the grain *golas* is Rs. 350,000 or 3 ½ lakhs. Hence the total of the annual credit supplied by these co-operative societies was about Rs. 64 ½ lakhs which is not more than 2 per cent. of the estimate total annual requirements of the rural population (excluding landlords), *i. e.* about 33 ½ crores (Rs. 335,000,000).

The central co-operative banks in addition to their other business, make loans to the primary societies from which these lend to their members. Reports of the nature and extent of the loans are made to the central banks which are therefore in a position to supply information. It is noticeable that there has been a steady increase in the proportion of long term business, the percentage rising from 31.7 in 1924 to 43.5 in 1927, with corresponding decrease in the short term loans for cultivation, maintenance, etc. In other words, the co-operative organisation at present functions, not only as an agricultural bank granting the credit needed to grow the crop, but also as a land mortgage bank giving loans for repayment of debts, for redemption and even for purchase of land and for improvements. In view of this it would be desirable that the central banks should be organised in two separate departments, one dealing exclusively with long term business and the other with the short and medium term business, keeping separate registers and ready to report when required on the position of each class of business. The allotment of capital available for the different class of loans can only receive proper attention when the departments are distinguished in the way indicated. In this connection it may be noted that it would be a great advantage if the primary societies were enabled to draw on the central bank for short term loans only, on a cash credit up to a maximum fixed at the beginning of each year. Cultivation and maintenance loans are wanted promptly when required at all, and at present there is delay in meeting these requirements on the side of the co-operative credit society which obliges the member to obtain these loans meantime from the moneylender at a much higher rate of interest, thereby unnecessarily worsening his position.

It seems unlikely that the co-operative organisation can usefully attempt to meet the credit needs of the landlord class. The larger sums required would involve overstrain of its financial resources, and locking up of the working capital of the central co-operative banks in a few transactions. A central land mortgage bank for the whole province is recommended, with branches at four of the chief towns of the province which would supply the local knowledge required for testing the security offered and enforcing repayment. The directorate should be at present drawn

(1) A lakh = 100,000 rupees or £6,666 sterling Rs. 2.34 lakhs may be read 2 crores and 34 lakhs.

from officials of the land revenue administration and other Government officials together with representatives of the banking interests and of the borrowing class. Later the element of Government control might be reduced. All borrowers should be required to take up a number of shares bearing a fixed proportion to their borrowings, and should have some voice in the management of the bank. A working capital of Rs. 6 to Rs. 8 crores is required, and it is recommended that the Government should take up 50,000 shares of Rs. 10 each share, and that the bank should start business with that amount.

In order to raise the required capital an issue of debentures will be required, an interest of 6 per cent. being offered. On the other hand the rate for loans will be $8\frac{1}{2}\%$, with facilities for amortisation, at the correspondingly higher rates, in 15, 20 or 25 years. Such rates will be much below those charged by moneylenders throughout the province on mortgage loans. The restriction of the land mortgage banks to the *zamindar* class may be criticised on the ground that in this way only a comparatively small class will be benefited. This landlord class is however of great importance and its embarrassment is the cause of much of the stagnation in rural areas. If freed from their present weight of debt the landlords should be able to adopt progressive methods in agriculture which will benefit their tenants and themselves.

The conclusions of the Banking Enquiry Committee as regards agricultural credit were in favour of extension and improvement of co-operative banking to meet the credit needs of the ordinary cultivator in the province, *i. e.*, both the credit he requires for growing his crop and that required for relieving him from the dead weight of previous borrowing or for improvements. Among the improvements proposed in the co-operative banking system are: the separation of the business of central banks into short term and long term business; extension of cash credits for primary societies; raising of part of the capital required for short term loans by means of short term bills; raising of capital for redemption of debt by debentures issued by the Provincial Co-operative Bank, the peak organisation.

On the other hand for the long term credit needs of the landlord class the establishment of a Land Mortgage Bank is proposed on the lines already indicated; the method of meeting the short term requirements of this small but important class was a point on which the Committee were not fully agreed, the majority proposal being the registration of selected *mahajans* or moneylenders under certain conditions. The alternative is the utilisation of the Co-operative society or the development of the connection of the indigenous banker with agriculture.

The above is an attempt while leaving aside the more technical aspect, to indicate the problems of agricultural credit in an important province of India together with the outlines of the proposals for their solution.

C. H.

* * *

CO-OPERATION

Association and Co-operation in Livestock Farming in Spain (1).

Any information as regards co-operation and association in livestock farming in Spain will be suitably prefaced by a statement of the existing head of livestock in the country, the zones in which this type of farming is mainly carried on and other details relating to the subject. In this way this brief article will give a complete account of this branch of Spanish agriculture.

The following statement shows the total head and the provinces which are most heavily stocked :

Cattle	3	millions (Cuenca, Oviedo, Lugo)
Sheep	19	» (Badajoz, Caceres, Burgos)
Goats	4	» (Ciudad-Real, Caceres, Malaga)
Pigs	4	» (Lugo, Badajoz, Cordoba)
Horses	2.5	» (Andalusia, Badajoz, Saragossa).

There has been a strongly marked tendency towards the breeding of cattle with dairy aptitudes with the result that the Swiss and Dutch breeds have been encouraged and a mixed Spanish breed formed which is of high value for its milk yield. The meat purpose cattle predominate in the zones where market gardening and growing of forage crops prevail and the dairy type in the North where there is a more abundant rainfall and accordingly good pasturage.

The characteristics of the Spanish soil are better suited to the development of woolled stock as is shown by the density percentages, which are 87.6 head (of sheep) per 100 inhabitants, and 38.4 head per hectare. In the province of Badajoz there are 100 head per square kilometre. The woolled stock of Spain are all pure breeds, with no mixture of foreign elements ; they are triple purpose (wool, meat, milk) for the most part, but are mainly prized for their wool, as from the merino sheep a very fine quality of wool is obtained which can compete with the best in the world while the sheep reared mainly for their milk also yield a good ordinary quality. The characteristic breeds are the "merino", the "churra" and the "manchega" ; the first being the principal wool-yielding breed and the other two leading as regard milk production.

Goat farming is more important in Spain than in any other country of Europe. Three types exist, corresponding to the zone of the Pyrenees, the Central zone and the Southern mountains. The most important breeds are the Murcian and the Grenadine which give unparalleled milk yields, the average yield after the second time of bearing being 600 litres, while some specimens even give 800 litres and sometimes 900 litres.

Spanish breeds of pigs come under the Celtic and the Iberian types. In the regions where small holding prevails pigs are reared in styes, as crop farming conditions do not admit of pasturage, but on the great pasturelands and mountains of the South, the case is different.

(1) The material for this article has been taken from the publications of the General Association of Stockbreeders (*Asociación General de Ganaderos*) in the Kingdom of Spain.

Among the breeds of horses, the Spanish horse, *equus ibericus*, and its derivative the Arab horse, are alike descended from the Libyan breed. At the present time, with a view to improving and increasing the purity of the supply of saddle horses, the Spanish breed is crossed with the Arab, English and Anglo-Arabian breeds, while for draught horses the crossings are mainly with the Breton and Ardennes breeds. The characteristics of the Spanish horse are strength, hardiness and intelligence. As regards the ass, the Spanish stallion combines in himself so many good qualities that there is not one country that does not import specimens. The main breeds are the Andalusian and the Catalan ; this latter is particularly excellent for breeding purposes as it produces a type of mule unequalled for work.

Official measures of protection. — The Spanish Government has always interested itself in the development and improvement of stock breeding. The provisions for the protection of horse breeding are the most ancient, and certain of them are very decisive, such as the official order of 1745, by which it is enacted that if at any given time the pasturelands were not sufficient for the requirements of the horses of the locality, the *justitia*, or local authority, would be obliged to make grants of pastureland out of the communal lands or out of lands supplied by private owners. Various protection measures of one kind and another followed up to the year 1847, when an Advisory Stockbreeding Council was set up with a programme that seems extremely modern, including measures on the condition of the crops intended for the upkeep of stock, and on the improvements to be introduced therein, regulations for breeding studs, provision for economic enquiries, sale of products, study of epizootic diseases and the means of control ; in short all measures for which breeders are pressing at the present day in all parts of the world. By a Decree of 20 September 1919, the Section for Horse Breeding was reorganised by the formation of a Board which is still working and which has under it the eight zones into which the territory of Spain is divided for the better management of its horse-breeding. Regional Councils in each zone carry into effect the measures enacted by the higher Councils. In each of the zones there is a horse breeding stud where the owner of a mare can have her mated free of cost and will also obtain the offspring without charge, and where every facility is given to stockbreeders. In March 1928 the Government enacted a measure of some interest, by which there was established under the supervision of the General Association of Stockbreeders a Herd Book and Milk Yield Register service. This was a reform of considerable importance as affording alike a guarantee and a stimulus essential for the maintenance of the breeds and their purity ; and it will also be an educative factor for the stockbreeding class. Mention can be made here only of the more important measures intended to bring about the development of the industry. Among such was the Royal Decree of 5 June 1924, classifying and delimiting the stock roads, which are public lands of traditional origin, set aside for the moving of stock about the country. The Stockbreeders Association was made responsible for the classification of these tracks into essential and non-essential, with a view to keeping up the former and eliminating the others. The proceeds of such elimination were to be divided between the State which would take 50 per cent., the municipal authorities through whose area the road passes and who would receive 25 per cent. to be used for the maintenance and improvement of the municipal lands, while the Association itself would employ the remaining 25 per cent. in paying the expenses of the classification and delimitation undertaking.

Association in stock breeding. — The development of live stock farming in the more remote localities is due to the fact that it is in this branch of rural activity that the spirit of associations finds its best expression. The necessity for mutual

protection of its interests against adverse influences, alike in finding pasturage for the stock and in selling the products, has impelled the stock farmers from the first to seek in combination the strength essential to defence.

The system of stockfarming inherited from the earlier inhabitants of Spain is that of migration of flocks and herds and the joint or collective utilisation of pastureland. A set back occurred under the influence of the Roman rule which was not favourable to stockfarming but on the other hand encouraged agriculture making Italy and her colonies the granaries of Rome. However the rule of the Visigoths who were pre-eminently a race of pastoralists stockfarming became once again predominant. In the course of subsequent history a powerful economic organisation is met with, the *Honrado Concejo de la Mesta*, a Council which exercised an influence first on the internal life of the country and later on the international market, as a decisive factor, at the epoch when the States emerged from the mediaeval period in Europe and their commercial development began.

The *Mesta* was a society of stockfarmers who remained the independent owners of their property in livestock and retained their rights to the utilisation of the pastures which they rented in the name of the community. It was a guild like any of those formed in the Middle Ages for each separate type of work and to act as a means of defence when necessary, and it acquired importance from the fact that it was engaged on a branch of the public wealth which covered all parts of the peninsula.

This organisation included all the livestock farmers of the Kingdom although actually only those of the four sierras, Leon, Avila-Segovia, Cuenca and Soria, who owned migrating flocks and herds, were empowered to vote at the Council, conditionally on living in the sierra with their family and owning 180 head of stock. The farmers living on the plains could also hold a title to membership, and belong to the Council, but without having the same rights as the farmers of the sierras. This Council had a president invested with the supreme power of jurisdiction in the *Mesta*; it also had its magistrates (*Alcaldes Mayores*) and its executive officers (*Entregadores*) appointed at first by the president, and later by the King; its procurators elected by the Council and with a wide range of duties. In the Council were included also the judges in appeal cases (*Alcaldes de Alzada*) representing the four sierras mentioned and the *Alcaldes de cuadrilla* who were more closely in touch with the guild members of the *Mesta*. The Juntas which were the real assemblies of this association were held twice a year for the purpose of election of officers, discussion of grievances and disputes whether arising between members or with the mayors, formulating agreements relating to the interests of the *Mesta*, passing the accounts and fixing the rate of contributions to be paid by members. The agreements made by the Junta had legislative force, constituting the so-called "avenencias", or juridical bases. This legislation lost all its importance from the moment when the *Junta* had recourse to the royal authority. The Council of the *Mesta* had rights known as *mestenos* over routes of communication, pasturages, possessions, taxes, etc. These rights reflect the force of the internal organisation of this *Mesta*, the one calling for special comment being the right of possession. This consisted in the right of members of the *Mesta* to obtain the advantage of the pastures by the mere fact of placing their flocks upon them. In other words possession conceded by the owner of the land for one year gave rise to a real right over the farm. The spirit of collectivism which prevailed in the Council led later on to conflict with agriculture as representing the individual, and in this way the decline of the *Mesta* came about. It was suppressed by Royal Decree on 31 January 1836, but a new corporation succeeded it which is the present Association of Stockbreeders of the Kingdom of Spain. Working

on modern lines this Association has made of agriculture and stockfarming two converging forces which support the economy of the nation.

The General Association of Stockbreeders (*Asociación General de Ganaderos*) includes at present the owners of the different kinds of livestock ; the association is on a voluntary basis and membership may be of two kinds, individual or collective. Among the individual members some are ordinary or full members, and others are associate members. The ordinary members are the breeders, while the associate members are those who although not owning stock are interested in herd improvement and desire to belong to the association on these terms, or persons who are engaged in industries connected with stock breeding. At the end of the season 1928-1929 the total membership was 28,800 individual members and 4,200 societies. Admission for any class of member is conditional on payment of a subscription. The administration of the Association is in the hands of the General Council (*Junta general*) which meets once a year in ordinary session with extraordinary meetings at any time that the Bureau of the President in agreement with the Permanent Committee considers it necessary. The President is appointed by the Government on the submission of three names by the General Council. The Permanent Committee which is appointed by the General Council consists of a president, a general secretary and thirty members. In addition to its plenary meetings, this Committee is also divided into eight special Commissions, dealing respectively with : Exhibition and general encouragement of stock breeding ; credit and social activity ; stock routes and pasturage ; co-operative services ; derived industries and hygiene ; tariff and trading relations ; internal administration and herd books.

This association has a wide provincial organisation. Its interests as regards livestock are watched by 45 provincial Councils, As branches of these provincial Councils, there are local councils which protect the stockbreeding interests each in respect of a municipal area within the province

Economic and Social Activity. — Apart from the maintenance of the stock routes necessary to the migration of flocks and herds — a system essential to Spanish stock farming — one of the main objects, as regards the safeguarding of members' interests, of the *Asociación General de Ganaderos*, is the encouragement of the spirit of co-operation within the various branches of livestock production. One of the chief forms of wealth produced from earliest times by this industry in Spain is wool, and the Association undertakes the sale of wool grown by members on commission, while the scouring and carding is done in works established under its auspices. In selling their wool in the grease without knowing the real value the growers were at the mercy of the middlemen, who with their knowledge of the prices quoted on the world markets, profited by this ignorance. At present, the members send their wools in grease to the Association works for scouring and carding, and can also have them sold under the most favourable market conditions. An initial advance of the price to be paid is made on delivery of the product. This system has two advantages for the growers : 1. they receive in full the proceeds of their wool ; 2. they learn the yield and quality of their commodity and its true value on the market and hence are in a position to improve it.

The supplying of the large centres of meat consumption, lying at a distance from the production areas, was a problem for the stock farmers. Not only did transport present difficulties, but there were taxes to be paid and the growers' requirements were in no way met by the imperfectly organised slaughterhouses, so that they found themselves obliged to consign their stock to dealers. In order to remedy this difficult position which constituted a kind of monopoly and so as to bring the system of intermediaries to an end, the Association has established slaughterhouse

services in the large towns. The proceeds of the livestock sales effected through the Association in the course of the last financial year was about 6 million pesetas. To ensure the supply of large centres in milk, cheese and butter and to eliminate similar abuses, a co-operative society of milk producers and suppliers has been formed, the members of which sell directly through the Association.

In other branches of co-operation, the Association distributed to its members seeds of forage crops, fertilisers and all kinds of implements at cost price. Its health and sanitary section gives free consultations and undertakes examinations of special cases, and it also distributes serums and vaccines which are known to be efficacious against livestock diseases. Equipment for making analyses is also supplied to the dairy industries, and the Association possesses laboratories for soil analysis; the different sections of this service are entrusted to a technical staff of high competence. The co-operative services mentioned have brought in a total of 20 million pesetas in the course of the financial year 1928-29.

Considerable progress has been made by the Credit Bank of the Association. Loans are made to individuals and to societies belonging to its organisation, up to 3,000 pesetas in the case of individuals and up to 10,000 in the case of societies, the rate of interest being 4 per cent. per annum against personal guarantee or pledge.

Much interest has been displayed by the Association in regard to instruction. Its technical staff is always prepared to undertake any practical instruction applied for by the members. Visits are paid by its officers to centres of dairying industry carried on by members with a view to a practical solution of the difficulties which may arise in the preparation of products, as well as to the producing areas with a view to studying the different types of manufacture. With the idea of continuing and developing the work of instruction, the Association has organised since 1925 yearly practical courses in stock farming and the derived industries. The classes are open to persons of either sex, from the age of 14. The instruction is divided into three groups of subjects: the first which is the most complete includes live stock and live stock farming, hygiene of the herd, cultivation of grasslands and live stock feeding, dairy industries; the second group, poultry-keeping and rabbit breeding; and lastly bee-keeping in all its aspects.

The result of these efforts of the Association in favour of stock breeding is seen in the progress of the industry in Spain. This is faithfully reflected in the regional and local competitions preparatory for the great exhibitions which are held every four years in Madrid on the immense grounds which have been formed into a permanent park for the purpose.

All these forms of co-operation are linked by a common spirit, the desire to find in the union of these farmers the force which is needed for resolving the problems that affect them. This power in association which formerly gave the Council of the *Mesta* its importance, now adapted to the new methods dictated by progress, is being utilised by the *Asociación General de Ganaderos* in the conviction that in the progress of stockbreeding, from earliest times part of the wealth of Spain, is involved also the increase of the national revenue.

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production the writer comments on the conditions of rural economy in Italy on the eve of the war, and then proceeds to examine the effects of the war not only on economic facts and institutions but on the classes generally concerned in agricultural production. Of special interest is his analysis of the extra-economic factors which have influenced the situation and take essential shape in the various forms of State intervention, justified by the needs of the times. The work is divided into two parts. The first part deals with the moral and economic conditions of the rural classes during the war and in the early post-war years. In the second part the following subjects are treated under separate headings: the action of the syndical organisations and the legislative work of the State, the effects of the war on farm tenure agreements and on farm labour agreements, on co-operation and on property in land.

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INTERNATIONAL REVIEW OF AGRICULTURE

PART II

MONTHLY BULLETIN

OF

AGRICULTURAL ECONOMICS AND SOCIOLOGY

ECONOMIC AND SOCIAL CONDITIONS OF THE AGRICULTURAL CLASSES

Hours of Work in Agriculture in Latvia.

The Institute of Rural Economy of the Latvian Central Agricultural Society had certain enquiries made into the length of the average working day in agriculture. These enquiries refer to the pre-war years 1911, 1912 and 1913, and in respect of the post-war period to the years 1925, 1926 and 1927.

Investigations in regard to the average length of the working day were carried out by means of special enquiries. Several thousand copies of the enquiry schedules were distributed throughout Latvia by the agricultural organisations, instructors in agriculture and the correspondents of the State Statistical Bureau. In addition the questionnaire was sent to those farmers who were in direct touch with the Institute of Rural Economy. Out of the questionnaires distributed, more than 1000 replies were received by the Institute and 950 were found to be of value in the preparation of statistics.

The form of questionnaire was as follows :

INSTITUTE OF RURAL ECONOMY OF THE LATVIAN CENTRAL AGRICULTURAL SOCIETY.

*Questionnaire relating to the length of the working day
and to productivity in agriculture.*

Farm in the commune of of the District of

Area of the farm in pourvietas.

Number of the members of the farm family who have worked on the farm during the last few years and number of wage earning workers

Number of members of the farm family who worked on the farm before the war and number of wage earning workers

How far has the productivity of the wage earning farm workers diminished as compared with the pre-war years (by $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{5}$, % etc.)

How many days holiday do the wage earning workers have in one year, not counting Sunday and general holidays, in addition to sick leave and leave days for attending market, etc.

N. B. — By "the pre-war years" must be understood years 1911, 1912, and 1913, and by "the last few years", the years 1925, 1926, 1927.

It will be seen from this schedule that questions of a general character were included : the locality of the farm, the area of the farm lands, the number of members of the farm family working on the farm and the number of wage earning workers

Length of the working day in recent years and in the last three pre-war years.

Periods of farm work	Time of beginning work in morning		Time of ending work in evening		Break Times						Length of working time as result hours and minutes	
					morning		midday		afternoon			
	A	B	A	B	A	B	A	B	A	B	A	B (1)
I Period of ploughing and sowing from 20 April to 15 June												
(a) for men												
(b) for women												
II Period of crop cultivation from 15 June to 1 July												
(a) for men												
(b) for women												
III Period of the hay harvest from 1 July to 1 August												
(a) for men												
(b) for women												
IV Period of rye harvest and ploughing of the fallow, from 1 August to 1 September												
(a) for men												
(b) for women												
V Period of the other cereals harvest and of the flax pulling in the fields from 1 to 20 September												
(a) for men												
(b) for women												
VI Period of the potato harvest from 20 September to 20 October												
(a) for men												
(b) for women												
VII Winter period												
(a) for men												
(b) for women												

(1) A = Years 1911, 1912, 1913 B = Years 1925, 1926, 1927

both before the war and in recent years, the extent to which the productivity of the wage earning workers has diminished in respect to the pre-war years, the number of days' holiday given to the wage earning workers, apart from Sundays, general holidays and days of sickness.

In view of the fact that the length of the working day varies considerably with the seasons, the year was divided into seven periods of seasonal work in agriculture. These periods which have been fixed by the State Statistical Bureau cover thus a five years return of the main agricultural occupations during the different seasons.

The periods established are as follows

- I. Period of ploughing and sowing from 20 April to 15 June ;
- II. Period of manuring (and general crop cultivation) from 15 June to 1 July ;
- III. Hay harvest period from 1 July to 1 August ;
- IV. Period of the rye harvest and ploughing of the fallow from 1 August to 1 September ;
- V. Period of harvesting of the other cereals and of flax pulling on the fields from 1 September to 20 September ;
- VI. Period of the potato and pulse harvest from 20 September to 20 October ;
- VII. Winter period from 20 October to 20 April.

The data as to the length of the working day were asked for in respect of men and women separately. As required by the questionnaire, the necessary information has been supplied by the farmers as to the hours at which work is begun and finished,

and as to the breaks during the morning, at midday and in the afternoon. The actual working day has been reckoned according to the hours for beginning and ending work deducting the time for breaks in the course of the day. The farmers have stated the hours of work with remarkable precision up to 15 minutes or a quarter of an hour.

The first essential in the preparation of statistics was the verification of the data supplied on the completed questionnaire forms. Only those replies were taken into consideration for which there was no doubt that the figures supplied were in conformity with the facts. The enquiries were in the first instance grouped by the 19 districts of Latvia, then by the four provinces, and finally the average results were taken for the whole country.

In addition, the replies were divided into three groups in accordance with the area of the farm. For each group the averages were taken separately. In the first group were included farms with area up to 27 hectares which is considered to be the maximum area of the newly formed holdings; in the second those with area between 27 and 50 hectares and in the third those with area of more than 50 hectares. Finally the farms were once more divided into two groups: farms worked by the owner with the members of his family only, and farms on which the work is done by wage earning workers in addition to the members of the farming family.

In order to draw the required conclusions it was necessary to establish the length of time worked for each seasonal period. The average length of the working day for each period was multiplied by the length of the period in question expressed in weeks. Adding all these results together and then dividing by 26 (the number of weeks of farm work in the summer season), the average working day is obtained for the summer season. The winter period is also 26 weeks, and one for which the average working day is taken as the same for the whole period. Hence to obtain the average length of the working day for the whole year, the two figures for the summer and the winter season, each of 26 weeks, are added and divided by two. The object of these investigations is to establish the theoretical length of the working day, that is to say, what it would be in the cases in which it is not affected by interruptions in work due to moving from one part of the farm to another, *i. e.*, walking time, or to weather conditions, rain, snow etc.

The influence of these circumstances on the length of the working day was not investigated as it appears that the farmers cannot furnish precise data from an objective point of view in regard to the reduction of the hours of work thereby.

The above table gives some characteristic information as to the farms under

Some general data relating to the farms under review.

	Groups of farms according to area		
	Up to 27 ha.	27-50 ha	More than 50 ha.
Number of farms under review.	193	356	401
Average area of farms in ha.	18	40	72
Number of members of farm families engaged on the farm:			
(a) pre-war	3.50	3.25	3.00
(b) post-war	3.00	3.25	3.00
Number of wage-earning workers on the farms.			
(a) pre-war	2.00	3.00	4.25
(b) post-war	1.75	2.50	3.50
Total of persons engaged:			
(a) pre-war	5.50	6.25	7.25
(b) post-war	4.75	5.75	6.50
Holidays granted to wage-earning workers	10.25	9.50	9.00
Percentage of reduction of productivity of wage earning workers.	25 %	25 %	25 %

review, in such a way that the conclusions drawn from the statistics are valid for agriculture throughout Latvia.

In the first instance it may be noted that changes have taken place in the total population engaged in agriculture which has been perceptibly reduced in comparison with the pre-war years. The world war had affected the economic life of Latvia very disastrously. Military operations were carried on over the territory of Latvia, and all farm stock as well as manufacturing stock was transported into Russia, as well as a large proportion of the population. During the war years the Latvia population thus expatriated was decimated by epidemics and of those who survived many did not return to Latvia for a variety of causes. All these causes contributed to the reduction in the population. On 1 January 1914, there were 2,552,000 person) living on the territory of Latvia, but on 14 June 1920 (the population census years there were only 1,596,131 persons. In the post-war years, the number of the population increased, the increase being due to the fact that the emigrants were beginning to return to Latvia. According to the figures given by the population census of 1930, there was in Latvia a total population of 1,945,000 inhabitants. As a consequence of the war the rural population has also much diminished. On 1 January 1914, the rural population was 1,600,300 inhabitants, but according to the 1930 census, the figure was only 1,206,143.

Diminution of the labour supply in the country districts has resulted from the diminution of the rural population. The shortage of labour was further aggravated by the agrarian reform which has brought into being 100,000 units of new holdings with the result that agriculture as a whole has to depend on a reduced number of farm workers. According to the data collected by the enquiries, it will be seen that the number of the wage earning workers has fallen from 3.50 to 2.91 on a holding, *i. e.*, 17 per cent. In the same way the number of member of the farm family engaged on the farm has diminished.

The reduction in the labour supply has resulted in an increase in the wages of agricultural workers. For example, the annual wage of a farm worker amounted in 1921 to 236 lats, but in 1929 the yearly pay was 498 lats. A woman cowherd earned 146 lats in 1921, but 338 lats in 1929. If the 1921 wages are represented by the index number = 100, the index for 1929 would be 211 for a farm worker, and for a female cowherd, 232.

The shortage of farm labour has created a privileged situation for farm workers with the result that very often labour agreements are broken.

In consequence of the above conditions, farming discipline has been relaxed. As the table shows, the productivity of the farm workers has declined by 25 per cent., in comparison with the pre-war years.

From the data of the same table, it will be seen that workers, engaged by the year in agriculture in Latvia, have holidays for pursuing their own affairs. These holidays vary, according to the size group of the farms, from 9 to 10.25 days, or on an average for all the holdings, 9.58 days of holiday are granted per year to a worker.

From 20 April to 1 or 15 September the working day in agriculture is divided in Latvia into three or four spells. The first spell of work begins at 4 or 5 a. m. and lasts till 7.30 or 8. a. m. The farm workers then take a short rest with breakfast. The second spell of the day's work is from 8 a. m. to 11.30 a. m. or 12 noon. After 12 there is a break of two hours or two and a half hours, which are regarded as the midday hours. The third part of the day's work begins at 2.30 p. m. and lasts till 4.30 p. m. or 5 p. m. There is then a break of half an hour or three quarters and a light meal. The fourth spell lasts from 5.30 p. m. to nightfall. It is only from 20

Length of working day of wage-earning workers in 1925, 1926 and 1927 (average day).

Periods of farm work	up to 27 ha.		27-50 ha		more than 50 ha.		Average for all groups	
	Men	Women	Men	Women	Men	Women	Men	Women
I.	hours		hours		hours		hours	
20/IV-15/VI	12.00	12.25	11.25	11.75	11.25	11.75	11.50	12.00
II.								
15/VI-1/VII	12.50	12.75	12.00	12.50	11.75	12.00	12.00	12.50
III.								
1/VII-1/VIII	13.75	13.50	13.00	13.00	12.50	12.50	13.00	13.00
IV.								
1/VIII-1/IX	12.25	12.50	11.75	12.00	11.25	11.25	11.75	12.00
V.								
1/IX-20/IX	11.50	11.50	11.25	11.25	10.50	11.00	11.00	11.25
VI.								
20/IX-20/X	10.25	10.75	10.00	10.75	9.75	10.50	10.00	10.75
I/VI.								
20/IV-20/X	12.00	12.25	11.50	12.00	11.25	11.50	11.50	11.75
Annual average	10.50	11.25	10.00	11.00	9.50	10.75	10.00	10.75
VII.								
20/X-20/IV	9.00	10.25	8.50	10.25	7.75	10.00	8.25	10.25

April to 1 or 15 September that the midday meal and the afternoon meal are taken with the breaks in the working time.

According to the national custom, the taking of the afternoon meal begins with the return of the cranes from the Southern lands and when the cranes go south again the meal is no longer taken. During the hottest days of the summer, that is to say, between about 15 May and 1 August, the workers take a midday sleep during the hours of the noon break.

The working day is divided into three spells during the autumn and winter, *i. e.*, between 1 or 15 September and 20 April. Break times and meal times during these seasons are the same as in the summer with the exception of the afternoon meal; the midday meal is taken in winter somewhat earlier than in the summer.

In respect to the time of beginning and ending the working day, it appears that there is no difference between the different groups of farms.

As to the actual length of time occupied in work, *viz.*, the time from beginning to end with deduction of the break times, the table shows that during the summer the length of the working day is 11 hours and a half for men and 11 hours and three-quarters for women. During the winter season, the men work in all for 8 hours and a quarter, and the women for 10 hours and a quarter per day. Over the whole year, the average length of the working day is 10 hours for men and 10 hours and three quarters for women.

It will be seen that the working time is always rather longer for women than for men. This is explained by the fact that in Latvia the farming is largely stock farming and the time and attention required by stock fall rather upon the women than the men on the farm. If a comparison is made between the pre-war working day and that of the post-war years taken, it is clear that during the summer season, the men's working time is reduced by three-quarters of an hour and the women's by one hour, while in the winter, the men's day is reduced by one hour and a quarter, and the women's by half an hour. The average reduction for men and for women

over the whole year is one hour per day. The length of the working time varies in relation to the size of the different farms, as appears from the following table :

Length of working day on the farms in the different size groups.

Size group	Summer season		Winter season		Yearly average	
	M	W	M	W	M	W
I	12.00	12.25	9.00	10.25	10.50	11.25
II	11.50	12.00	8.50	10.25	10.00	11.00
III	11.25	11.50	7.75	10.00	9.50	10.75

This table shows that the working day is shorter on the large farms than on the small holdings.

In the table appearing below an idea is given of the length of the working day on those farms where wage earning workers are not employed, but where all the farm work is done by the farmer himself with the assistance of members of his family.

While the average post-war working time of the wage-earning workers on farms is for men 10 hours and for women 10 hours and three-quarters, on the other hand if the farm is worked by the family only, the members of the family work on an average over the whole year, the men 11 hours and a quarter and the women 11 hours and a half. Consequently on these latter farms the length of the working day is longer ; the men work longer by one hour and a quarter and the women by three-quarters of an hour, or taking men and women together, they work, on the average one hour longer than on farms where paid labour is employed.

Actual length of working day in pre-war years (1911, 1912 and 1913) as well as that of recent post-war years (1925, 1926, and 1927) on farms worked by members of the farming family.

Periods of farm work	Pre-war		Post-war		Increase or diminution	
	Men	Women	Men	Women	Men	Women
I.						
20/IV-15/VI	12.75	12.50	12.50	12.75	—0.25	+0.25
II.						
15/VI-1/VII	12.50	13.75	13.75	13.75	+1.25	nil
III.						
1/VII-1/VIII	13.75	13.75	14.50	14.25	+0.75	+0.50
IV.						
1/VIII-1/IX	12.75	12.50	13.00	12.75	+0.25	+0.25
V.						
1/IX-20/IX	11.75	11.25	12.25	12.25	+0.50	+1.00
VI.						
20/IX-29/X	10.75	11.25	11.00	11.25	+0.25	nil
I-VI.						
20/IV-20/X	12.50	12.50	12.75	12.75	+0.25	+0.25
VII.						
20/X-20/IV	9.00	9.25	9.75	10.25	+0.75	+1.00
Yearly average	10.75	10.75	11.25	11.50	+0.50	+0.75

While the length of the working day, taking all farms together, is reduced in comparison with the pre-war years for men and women alike by one hour, on farms that are worked only by members of the farm family the working day has become longer than it was before the war, i. e., for men by half an hour and for women by

three quarters of an hour. The explanation lies in the fact that the economic crises which have occurred in recent years oblige the farmers and their families to work harder than in the pre-war times when it was not so difficult as it now is to gain a living.

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CO-OPERATION AND ASSOCIATION

Co-operative Wine-making in France.

Vine growing is one of the branches of agriculture in which co-operation has shown itself particularly successful.

The marked development of co-operative wine-making and selling societies and distilleries is the proof of their utility.

Co-operation is almost an essential for the small or medium vine grower.

Obtaining of credit, establishment of trade channels, utilisation of by-products, storage of the product after having treated it scientifically, all these are problems that can only be solved by the co-operative society of producers, unless the producer is prepared to make large advances of capital.

The article which follows is a summary of a study on wine-making co-operation in France made by M. Louis TARDY, Director of the "Caisse Nationale de Crédit Agricole", an institution which has taken an important part in the development of this special form of co-operation.

Union between small and medium vine growers in France has had to come about owing to pressure of economic conditions. As the vineyards became more severely attacked by diseases, it became necessary to procure relatively costly spraying materials, etc.; after the invasion of phylloxera a work of reconstitution became essential. There has also been a determination to ensure the best possible conditions for the sale of wines. Such are the reasons which have led to the foundation of the earlier unions of vine-growers. The object of this type of growers' union was not at first production, since, as is well known, vine-growers like to make their own wine, and have a definite objection to any joint dealing with their vintages. This fact is sufficient to explain why, apart from certain abortive attempts in Marne in 1893, the formation of co-operative societies for production and sale in connection with wine growing dates back only some thirty years. Co-operative wine making and selling societies came into existence, followed by co-operative distilleries, accompanied where conditions were favourable by extraction of cream of tartar and of grapestone oil.

CO-OPERATIVE SOCIETIES FOR PRODUCTION AND SALE OF WINES (CAVES COOPÉRATIVES).

In the South of France from 1900 to 1909 the reconstitution of the vineyards brought about a considerable increase in production. The wine-making equipment was inadequate. Shortly after the grape harvests, in spite of the low prices occasioned by the large offers, a considerable proportion of the wines produced and placed on the market could not be sold. To meet this situation, which was aggravated by adulteration, and particularly by watering, the formation of co-operative wine-growing societies was proposed. The first step was to form unions in the greater number of the vine-growing regions for engaging in the co-operative sale of wine. It was next considered advantageous to extend co-operation to joint

making of wine, and in order to obtain advances of agricultural credit and thereby to secure an extension of funds it was necessary to form wine-growing societies in the fullest sense. The first of these societies were founded in the Jura in 1901, in Hérault in 1902, in Tarn in 1903, in Haute-Garonne and Var in 1906, in Pyrénées Orientales in 1907, and in Aude in 1909. This movement, which was at first marked by the appearance of large numbers of these co-operative societies mainly in the departments of the Mediterranean littoral, extended to other regions including the Gard, Bouches-du-Rhône, Côte d'Or, Saône-et-Loire, Drôme, Ardèche, Indre-et-Loire, Rhône and Isère. It spread in fact nearly everywhere, even in regions where up to that time there had been no co-operative wine selling societies (*caves coopératives*). In Algeria the formation of these societies began in 1905.

When the individualism of the vine-grower yielded under pressure of facts, there still remained the difficulty of collecting the necessary funds for setting up the societies. The great majority of wine-growers are small holders with very modest resources, who are not in a position to find all the funds required for the purchase and starting of a modern equipment. There were still two other difficulties to overcome; one of finding competent persons able to devote themselves to the management of the society, and the other of choosing the most favourable moment for the sale of wine.

On the other hand it will be clear that no even fairly complete scheme could be established until there was a system of credit by which long term advances could be made to co-operative societies. Such a system was finally established by the Law of 29 December 1906, and it then became possible to set up co-operative societies for transformation of products in connection with vine-growing. Up to that time, co-operation had to be limited to the sale of wine, and could not be applied to wine-making.

The 353 co-operative wine-making societies existing in France on 31 December 1927 were divided among 24 departments, but the larger number, 266, were grouped into six departments, *viz.*, 81 in Var, 67 in Gard, 38 in Pyrénées Orientales, 34 in Bouches-du-Rhône, 25 in Hérault, and 21 in Aude. In membership they vary from some twenty or so up to some hundreds of members. Especially in recent years, a large number have been formed with the help of agricultural credit. The number of those societies which on 31 December 1914 had received long term advances was 68, while by 31 December 1928 it had grown to 320. Taking all together, the total of these advances at the end of 1928 was nearly 106 million francs, of which the Var societies had received 22 millions and those of Gard an equivalent sum.

ADVANTAGES OF THE WINE-MAKING SOCIETIES.

The success of the co-operative wine-making societies is explained by the numerous advantages offered by them. Less labour and higher selling prices are the result of a well organised co-operation.

The vine-grower has no longer to undertake the labour of wine-making and he is freed from the constant anxiety of the attention to be given to the wine throughout the year. The prices obtained are higher because the by-products (residues, tartars, etc.) are industrially utilised. Moreover the output is improved by the employment of an equipment which would be beyond the means of the individual grower.

It may be added that the standardised product is more appreciated by the wholesale dealer who finds a type of homogeneous product of uniform taste very useful for mixing with wines of different strengths.

ORGANISATION OF THE WINE-MAKING SOCIETIES.

Before 1906 these societies were generally constituted under the form of limited liability companies with variable capital and membership. After the passing of the law of 29 December 1906 which organised long term joint credit these societies found themselves compelled to adopt the form of civil societies and to insert in their constitution the clause of joint and several liability of their members towards the State. Certain wine-making societies fixed a maximum contribution of grapes, certain others a minimum. A production capacity of 4000 hectolitres seemed necessary so as to benefit by a really economic installation. The number of votes to which a member is entitled has been usually limited to three or five. If in certain cases, the rule "one member, one vote" has been adopted, in others a number of votes has been given to the co-operators proportional to their shares and to the weight of vintage consigned by each, limiting to three or five the number of votes which are at the disposal of a single member of the society. The expenses of installation vary greatly, but in 1928 these expenses were reckoned at between 70 and 90 francs per hectolitre stored. As a rule at the time of the first establishment, the societies require the subscription of a number of shares proportional to the contributions.

LOCATION AND CONSTRUCTION OF THE PREMISES OF THE SOCIETIES.

The question of the storage capacity of the vats is the most important question after that of the location has been resolved. The premises of these societies are usually arranged for near a railway station and are served by a short branch line.

If the position is not available, the co-operative society is established in the middle of the vineyard close to a wide and well kept up main road, a good solution in view of the increasing development of transport by motor lorry. The covered area may vary greatly, but the founders of the society have to fix the vat capacity when they know the number of hectolitres promised by each member.

The capacity depends on several factors. The estimates are based on the maximum supplies delivered provided that experience has shown that if the whole vintage is not harvested a capacity must be allowed higher by one-third than the volume of the vintage delivered, while if the vines are stripped then an excess capacity of one-sixth is enough.

The societies producing white wines require a vat capacity slightly higher than the deliveries, while those producing red wines require more, especially in Languedoc where it is the custom to reserve a series of vats for fermentation.

The space required for societies dealing with must should be calculated with a wide margin as it is necessary to take into account not only the must but the alcohol required for the treatment of the must. The equipment in use by these societies is usually thoroughly modern.

Vats of reinforced concrete either in the form of cubes or parallelepipeds of medium capacity have been recognised to be the most advantageous. For reasons of economy they are sometimes arranged with an upper and a lower part, the part of the vat below the ground being kept for storage purposes.

The grapes consigned may be weighed on a weigh-bridge or unloaded on to small trucks the tare of which has been ascertained.

The product is conveyed by water-wheels or other elevator system to the press. The equipment required for an installation capable of making 8 to 15 thousand hectolitres is usually as follows :

- 2 weighing measures (*bennes basculantes*) or a weigh bridge ;
- 2 or 3 hydraulic presses ;

- 1 elevator, 1 grape stripper ;
- 1 must pump or 2 foulo-pumps ;
- 1 wine pump.

All this equipment is usually worked by the help of motors and consumes on an average one horse power of steam per 1000 hectolitres in the medium sized societies and two horse power in the small societies. If however the equipment is driven by petrol motors the consumption may rise to about 100 litres of petrol per 1000 hectolitres.

The power necessary to drive the various machines may be shown as follows :

	Power required in horse power units
Press (continuous action)	15
Foulo-pump	6 to 8
Hydraulic press	1 to 1.5

COST PRICES.

The cost prices of the hectolitre stored and of the hectolitre delivered are the most important data to know at the time of the establishment of the estimate.

The cost price of the hectolitre stored is the quotient of the cost price of the society's premises divided by its capacity. If the premises have cost 800,000 francs, and if 10,000 hectolitres can be stored, the cost price per hectolitre stored is 80 francs.

The cost price of hectolitre delivered is the quotient of the cost price of the premises by the amount subscribed.

These installations require a fairly large outlay which is sometimes beyond the resources of the members who are obliged to have recourse to the State so as to obtain additional funds. The Ministry of Agriculture usually grants one-tenth of the total of the estimate not including the purchase price of the land and the costs of the first establishment.

The *Crédit agricole* makes long term advances which usually amount to one and a half times the paid up capital.

WORKING OF THE CO-OPERATIVE SOCIETY.

The collection of the grape harvest in a country where the vineyards are all of one type is a simple question, but becomes singularly complicated if trained vines growing on hill slopes or with different stocks introduce differences of quality on the area of the co-operative societies.

To keep count of these differences internal regulation is essential. Usually an arbitration committee fixes the dates of opening and of closing the season, the conditions of consignment, etc.

A sampling of the must and of the grapes is made at the time of consignment and the result is entered on a form which is handed to the member.

METHOD OF SALE OF WINE.

In the Pyrénées Orientales the system of sales through the co-operative society itself is prevalent, and is not without some disadvantages. The Management Council of the society or a committee appointed for the purpose formerly took responsibility for the sales. In order to avoid difficulties with the members it is now preferred to leave the decision to the general meeting. The only forward step to be

looked for in this respect would be the adoption of a system of sale scaled three or four times a year, which would ensure an average price.

In Languedoc the co-operative societies were freed from anxiety as to sales by direct bid made to the grower by the broker. This bid was made at the headquarters of the society and as the method was accompanied by certain disadvantages certain societies adopted a new system by which the managers were instructed to sell the product at the rate of one-tenth each month.

The sale is usually made wholesale or partially so. Attempts at agreement between co-operative producers' and co-operative consumers' societies have not so far had any appreciable results.

FINANCIAL ORGANISATION.

The expenses which a society has to meet are not proportioned to its output. They include expenses of wine-making and overhead charges. The expenses of the wine-making include wages paid to temporary labour during the wine-making and the decanting. Reckoning wages at 30 francs per day of from 10 to 12 hours, the expenses come out at from two to three francs per hectolitre.

Power charges and wine-making materials such as selected ferments bring the costs of wine-making by another one or two francs per hectolitre.

Overhead charges are relative to the upkeep or to the repair of the buildings taxes, insurance premiums, wages and amortisation charges.

These latter charges are the most important ; they vary greatly with the date of building, the kind of material used and the date at which it was bought, the interest on the money borrowed and the distribution of the annual instalments of repayment. Summarising it may be said that for the 12 to 15 francs forming the total of the expenditure per hectolitre the distribution is as follows :

Wine-making	3 to 5 francs
General expenses	1 to 2 francs
Amortisation payments	8 francs

The society has receipts coming from the sale of the wine. In any joint sale the profits are divided between members in proportion to their consignments. In place of making this deduction of expenses from the sale price the majority of the societies prefer, as a way of covering themselves, to stop something out of the consignments as "share of the society" (*part de cave*) amounting to one-sixth of the product in wine plus the whole of the by-products.

The by-products form a quantity by no means negligible if it is remembered that in 1928 grape residues were worth 20 francs the quintal. On one hectolitre of wine 12 kilos of residues may be reckoned. If the society belongs to a co-operative distillery it may obtain from the by-products a profit amounting at the present time to 2.50 or 3 francs per hectolitre.

During the first years of working a co-operative society usually builds up reserves for itself. Later it makes rebates to members in proportion to their contributions of grapes.

UTILISATION OF THE BY-PRODUCTS.

The establishment of co-operative distilleries has constituted a great step towards the utilisation of all the by-products of the manufacture of wine and has made it possible to secure a profit from wines of less good quality.

These distilleries have developed in the same region as the co-operative wine-making societies and the crisis of over-production of wine from 1900 to 1909 has been

of considerable advantage to them as they have been useful in relieving the market of this surplus of wine. The distillery made it possible to obtain a product easy to store, not liable to deterioration and increasing in value as it became older. When accepted as a warrant the product served as guarantee for a loan.

In consequence, however, of the charges involved, of the locking up of capital, and of the risks of fall in price, the preservation of alcohol entailed more charges than the small grower could meet.

ORGANISATION OF THE CO-OPERATIVE DISTILLERIES.

The first co-operative distillery was founded in Hérault under the form of a syndical association governed by the law of 1865. In 1906 it was transformed into a co-operative society so as to benefit by the long term advances of agricultural credit. At the end of 1927 there were in France more than 220 large co-operative distilleries apart from the co-operative societies with limited area which existed in large numbers in departments where vine-growing is not the principal resource such as Loir-et-Cher, Rhône, Saône and Loire.

Advances of agricultural credit to the co-operative distilleries amount to more than 19 million francs.

WORKING OF THE CO-OPERATIVE DISTILLERIES.

Constituted under the form of civil societies the co-operative distilleries require from their members a subscription of capital amounting as a rule to 2.50 or 3 francs per hectolitre, or from 20 to 24 francs per quintal of grape residues. This contribution usually amounts to the third of the necessary funds. The two remaining thirds are usually advanced by the *Caisse Nationale de Crédit Agricole*. Moreover at the present time some of these co-operative societies may receive State grants amounting to one twentieth of the cost of installation.

The equipment of the societies includes presses for treating the grape residue by steam and in this way a form of alcohol is obtained. On distilling the *piquettes* or liquid obtained by exhaustion of the residues, wine alcohol is manufactured which is sold at much higher price on the market. An average distillery of from 300 to 400 tons which has adopted the press method gives a return of about 350,000 francs and can work 5,000 kilos of grape residues per day. The distillery attached to the Massillargues co-operative society handles more than 25,000 kilos of residues per day, in this way obtaining an alcohol with content of 86° to 90°.

"La Catalane" at Perpignan produces wine alcohols by the exhaustion method treating about 7,500,000 kilos of grape residues. Both the distillation and the sale of the product are carried out on a joint basis. If one quintal of grape residues yields on an average 4 litres of pure alcohol at 100° which is sold at present at 10 or 12 francs the litre, the member receives about 30 francs. Another interesting feature of the grouping of growers into co-operative societies is the retrieval of products that formerly remained unutilised.

Among these latter may be noted grapestone oil. The grapestones can only be treated in large factories where the stock of grape residues is over 2,000 tons. The stones are separated at the time of treatment so as to avoid fermentation, are dried, and then ground. Separating the solid part, 12 to 13 kilogrammes of oil is obtained for every quintal of residues and may be sold at 3.50 to 4 francs.

The cake which contains up to 2 per cent. of nitrogen sells after preparation for fattening at 7 francs the kilogramme, taking into account the amortisation charges, this means a return of from two to three francs for the grower.

If extraction of tartar for the manufacture of calcium tartrate is undertaken,

about 60 francs of product is obtained per quintal, giving a return of 20 to 24 francs. This extraction is part of the regular process at Roussillon.

Co-operative Elevators in Argentina.

There is at present a movement on the part of the large rural organisations of Argentina towards the establishment of a co-operative system of grain elevators on the basis of a trust formed between the State and the agricultural federations.

The farmers of Argentina fully recognise the warning given by Sarmiento : " the danger to Argentina lies in the immense extent of its territory and the weakness of its population " ; and since it is difficult to find a remedy for this evil and to correct adequately the low population density by a policy of immigration and land settlement, reliance has to be placed on the balanced development of their rural federations. Three great economic organisations represent different aspects of national interests : viz., the *Sociedad rural* of landowners, the *Federación Agraria Argentina* and the *Asociación Argentina de Cooperativos*. The *Sociedad rural* has a membership of 8,000, recruited in the class of the large landowners who own four-fifths of the Argentine soil. To meet this powerful union there was formed in 1912 the *Federación Agraria Argentina*, which took its rise as a group association at Rosario of Santa Fé, among tenant holders of land in the provinces of Buenos Aires, Santa Fé, and Cordoba. About 90,000 tenant farmers are settled in those provinces, representing almost three fourths of the Argentine farmers.

On 30 June 1926 the number of farmers who were members of the *Federación Agraria Argentina* was 17,297, subsequently raised to 19,321 including Argentinos, Italians, Spaniards, Slavs, Germans, French, as well as others of different nationalities scattered among the provinces of Buenos Aires, Santa Fé, Cordoba, Entre Rios, Tucuman, Santiago del Estero, on the national territories of the Central Pampas Chaco, Rio Negro and in some part of the provinces of San Luis and Mendoza which form the agricultural region of Argentina.

The number of the members has gone on increasing, the figure in 1928 being 24,703, in 1929, 30,110 and in 1930 rising to 31,818. These members are distributed over 400 mutual aid associations of mixed syndical and co-operative type, which at the present time represent one fourth of the wheat-growers of Argentina and one third of the area under wheat. The Federation controls 58 federal co-operative societies, and effects mutual insurance against hail, fire, and accidents during work. In addition it includes among its objects the breaking up of the large estates, the development of the diffusion of land settlement credit, the organisation of depôts for the preservation of products, of transports and marketing of crops, all matters which come under the control of the Federation.

This powerful body tends to draw federations of workers into close relationships of interdependence and economic solidarity. It also unites into one organisation the small holders and numerous aspirants for this form of ownership.

The object of the landowners is to secure the construction of roads complementary to the railway system, which they regard as essential to the national life, and also a system of national refrigerating plants. The cultivators, on the other hand are contending for schemes of home colonisation, credit, and the more modern forms of co-operation, beginning with a system of co-operative elevators, and aiming finally at co-operation between town and country, the purpose being to form a federation of agricultural experts and to restore the figure of the good settler and good head of a rural household, combatting in this way the decadence of the rural spirit and the lowered standard of living among farm workers which is becoming more pronounced every year.

On one point the two unions are completely in accord, viz, that in order to counteract the crisis which is hampering Argentina it is essential first and foremost to improve the trade in agricultural products. Hence the necessity for a system of elevators linked by a trust.

It is recognised that by this means Argentina will be able to maintain its export capacity, The conditions of rural life will be transformed and the spirit of true co-operation in farming will be strengthened, by the establishment of a system of silos, the rationalisation of production and the adoption of modern technique in the marketing of products. The Federation has announced a competition for the construction of 25 co-operative grain elevators.

Two elevators are in existence at the present time, one at Leones and the other at Oliva, belonging to the Cordoba association, which is incorporated with the Argentine Association of agricultural co-operative societies. There were present at the inauguration, besides the representatives of the rural Associations and Societies, also those of the Cereal Exchanges and those of the Argentine Wheat Pool, as well as representatives of the Federal and Provincial Government.,

In the addresses delivered on this occasion, stress was laid on the adoption of a new trust system of administration of the cereals produced by the co-operative federations, so as to obtain an improvement in production, linking together the activities of growers, exporters and industrials, with the work undertaken by the local and Federal governments in protection of the national economy. Such a policy is essential for the improvement of the position of the farming classes.

The projected elevator scheme in Argentina taken in conjunction with the economic and legal functions of the Argentine Wheat Pool, of recent foundation, will make it possible for co-operators in Argentina to establish relations with federations of consumers' co-operative societies in the importing countries, with the object of forming a series of collective links by means of consortia between production and consumption.

Co-operative societies which, following the example set by the Province of Cordoba, intend to promote the foundation of other elevators, will have to rely upon the assistance of the local governments to secure exemption from taxes for the trust organisations on the grounds which led the Governments of the provinces of Buenos Aires, Corrientes, Entre-Rios, and Santa Fé to exempt for all taxes the rural co-operative societies. The assistance of the local governments will also have to be obtained for the erection of plants for collective use.

In the same way it will be necessary to rely upon the subsidiary and complementary assistance of the Federal Government, more especially in regard to rural roads and railway transport of cereals, also for the financing on long term credit of the whole class of co-operative rural buildings and of co-operative manufacturing plants, which are to be organised by the local action of specialised sections of the present Institutions which are distributors of agricultural and mortgage credit.

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Compulsory Agricultural Societies in Peru.

By a law recently passed in Peru the organisation of representatives of the farming class into agricultural societies is rendered compulsory. These societies have partly the character of vocational unions and partly that of agricultural co-operative consortia, the object being to make use of these legally recognised agricultural organisations for guiding the farming class towards higher voluntary forms of co-operative marketing, amalgamation of farm undertakings, and joint contract, the rise and development of all of which would otherwise, without this basis of legal recognition, be much delayed.

The reasons put forward for such an institution which is at once political, economic and legal in character are as follows: (a) to ensure an immediate and profitable result for the proposals of the Government which are intended to promote the improvement and development of agriculture and livestock farming, it is advisable from every point of view that all farmers should be grouped into local societies with a common purpose related to that of the Government, making it possible thereby to effect consolidation; (b) that, by means of co-operation among local societies small farmers should be enabled, among other numerous advantages, to purchase seeds, fertilisers, machines, implements and installations; in other words commodities which so long as they are offered in the open market to individual farmers are usually priced above their means. In the same way farmers should be able by joint action taken by their societies, to improve their products and to obtain good facilities for marketing.

Hence the new system of rural co-operation and of corporate institutions will come into being in Peru as the result of the complete fulfilment by agriculturists of the following basic conditions, as laid down in a Supreme or Presidential Decree.

1. All those persons who engage in the farming industry whether as owners farming their own land, or as tenants, or in any other legal position, must so combine as to form in every valley, district, province or department, an Agricultural Society, which as regards its purpose and its method of working will be governed by regulations to be defined by separate decrees;

2. It will not be possible for any persons engaged in farming to evade the obligation to belong to the society of their respective administrative area. Only members of these societies can in any way secure representation in the Government, and thereby obtain the exemptions granted to agriculturists, or the other advantages enjoyed by the societies, including the purchase of guano on the islands;

3. The societies to be formed will be controlled and inspected by the Department of Agriculture and Stockfarming attached to the Ministry of *Fomento* and will be entered for that purpose in the proper register, as soon as they are officially recognised.

The Societies will be formed by the provincial Governors, whose business it will be to call together the agriculturists of their respective areas, so as to organise them into Agricultural and Stockfarming Societies.

Under the law the societies are bound to keep the following objects in view:

1. to give every attention to the progress of the agricultural industries within the administrative area. This may take the form of improving systems of cultivation, *inter alia*, by means of demonstration fields and experiment stations, or of promoting better and more systematic distribution and utilisation of irrigation waters and increasing the possible area of distribution by collection in the rainy season. Or the societies may confine attention to shows, competitions, etc.

2. to organise agricultural co-operation of all types and forms;

3. to safeguard the rights of members and to supervise the performance of their duties ;

4. to appoint a single legal representative for the purpose of approaching the public authorities in respect of all questions relating to the farming industry and the interests of members.

On being called together by invitation of the Governor of a province the farmers elect an organising committee, consisting of three persons, with the functions of formulating the constitution, enrolling the members and calling them together for the purpose of appointing a Management Council.

The funds of the societies consist of the monthly contributions of the members, additional contributions such as donations, contributions of life members or benefactors, bequests and grants made by the public authorities ; also profits from shows, competitions, exhibitions and in general from any activity connected with the development of the objects of the societies.

Any disputes that may arise out of the working of the societies are settled by the Department of Agriculture and Stockfarming.

This Department has organised 96 agricultural and stockfarming societies, some for the large administrative areas, some provincial and some district societies. As however the National Agricultural Society and the Stockbreeders Association have offered their services to the Government for the constitution of other societies, power was given to the two Societies by Resolution of the President of the Republic, dated 13 December 1929, to carry out the auxiliary work of organisation, with the obligation of rendering an account to the Department.

The National Agricultural Society has founded a number of syndicates of agriculturists and stock breeders and in addition a society for joint purchase and one for sales, and has undertaken the administration of these without charge.

The rules of these two societies serve as model rules.

Every member of the National Agricultural Society is considered as " potentially a member of the purchase and sales co-operative society ".

E. F.

* * *

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FARM ECONOMICS.

Number of Industrial and Agricultural Enterprises in Czechoslovakia. (1)

The State Office of Statistics has published (No. 175) the results of the census of business undertakings in Czechoslovakia, a census that was held in the month of May last. It was ascertained that in the 15,723 communes of the whole of the Republic there were 1,618,710 agricultural enterprises and 718,079 industrial enterprises. These are divided according to their size as follows :

Size group		<i>Agricultural enterprises or farms.</i>	
		Number	Percentage
Up to one hectare		446,629	27.6
From one to five hectares		704,736	43.6
" 6 10 "		254,376	17.7
" 11 30 "		181,703	11.2
Over 30 hectares		31,260	1.9
		1,618,710	

(1) Note received from the State Statistical Office of Czechoslovakia.

Industrial enterprises.

Number of workers —		Number of enterprises —	Percentage —
Up to	5 workers	659,341	91.8
»	» 19 »	42,602	6.0
»	» 49 »	9,441	1.3
»	» 199 »	5,183	0.7
200 and over	1,512	0.2
		718,079	

Of the industrial enterprises 252,659 or 35 per cent. are commercial undertakings. In consequence, in the industrial and agricultural spheres of Czechoslovakia, small enterprises predominate. The number of agricultural enterprises with an area not exceeding five hectares forms 71.2 per cent. ; the number of industrial enterprises with five workmen at most is equivalent to 91.8 per cent.

As compared with the year 1921, the number of farms not exceeding five ha. has fallen in Bohemia by nearly 64,000, while the number of larger farms has increased by 16,200. As regards industrial enterprises, since 1922, the number of small undertakings employing up to five workers has fallen in Bohemia by nearly 44,000 while the number of larger enterprises has increased by more than 17,000.

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[In this volume the immense region of the "Far West", as a constituent part of North America, is studied under the geographical and economic aspect and the special farming methods required for this arid zone are treated in considerable detail. The main features of the land settlement, its origin and present position, as well as the development of isolated farms and the now generally prevailing form of settlement, are described. There are hardly any rural centres or villages. The farm is in the first place an industrial undertaking and is becoming increasingly a capitalistic one. Extensive farming is encouraged on all sides by the Co-operative Extension Service founded before the war. The post-war tendency for agricultural development is characterised by the concentration of the business of farming in fewer hands and the constantly increasing rural exodus, as well as by the annual rise in the total value of farm production, as a consequence of the rationalisation of agricultural processes. Under the influence of natural factors and also, as consequence of international market conditions for agricultural products, the shifting of the centre of the different branches of the farming industry, the differentiation of the separate farming areas is becoming more accentuated. Taking it all round this is a contribution of great value for the understanding of the special type of agriculture in this zone of the New World.

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[This book, which is the reproduction of a course of lectures, indicates on general lines the beginnings and the diffusion of the co-operative system in the U. S. S. R. In particular the following points are treated : co-operation in the different socialistic theories (Owens, Fourier, Blanc, Lassalle, Marx, etc.) ; the foundations of the modern

Russian co-operative movement ; co-operation in the communistic economic system ; the N. E. P. and the new Soviet co-operative societies ; their structure, comparison with the former principles of co-operation ; consumers' societies in competition with private dealing ; agricultural co-operative societies, and association of growers into companies. As regards any results of co-operative activity in Russia, or its significance for the shaping of the modern economic system, it is impossible as yet to make any definite pronouncements. It is however the conviction of the author that the compulsion exercised over all spheres of economic life is not calculated to advance the free and successful development of the co-operative societies]

Les conditions de production, l'organisation et les resultats des exploitations agricoles en Tchécoslovaquie, II^{ème} partie, Institut de Comptabilité et d'Economie rurales de la République Tchécoslovaque (Directeur : Prof. Dr. Vl. Brdlik) Prague, 1930, 552 pages.

The text of the publication, the headings of the tables, the terms employed, and the study of the representative value of the Czechoslovakian enquiries relating to the position of agriculture are translated into French and German.

This work is based on the results of an enquiry carried out by experts on 1652 farms with the help of a questionnaire. The object of the enquiry was to obtain the data, expressed in averages for 1909 to 1913 of the conditions of production and yield in agriculture existing in the countries which now form part of Czechoslovakia during the pre-war period. The first part was published in 1928 in four volumes, each of which relates to one of the four countries constituting Czechoslovakia, and contains all the statistics that have been collected. The second part is the systematic arrangement of these data taking into account the different regions of production and the different size groups of the farms. It is thus a critical estimation of the data viewed as representative investigations. The study of the data thus handled brings out the influence of different production conditions on the economic results, and on the organisation of farms. It is thus possible to study with the help of this work the place taken by the various size groups alike in the separate rural economic life and in the national economic life as a whole. This work forms a valuable basis not only for scientific studies properly so-called, but also in regard to the practical objects of agricultural, customs, financial or similar policy. The data being based on economic conditions, stabilised as they were in the period immediately preceding the war, a precise idea may be formed by studying the results, of the economic changes which the events of the war had brought about in agriculture. As the data are shown not only in monetary values but also in units of weight and measure, calculations and estimates may be made referring to any variable price. The numerical material thus collected and arranged forms a sound basis equally for the trend of economic phenomena as for the study of economic questions in agriculture in general.

WILHELM (Prof. Dr. Richard) · Chinesische Wirtschafts- Psychologie- Schriften des Weltwirtschafts-Instituts der Handelshochschule Leipzig. Deutsche wissenschaftliche Buchhandlung. Leipzig, 1930. Seiten 120 (mit einer Karte von China).

[In opposition to the materialistic view which regards economic conditions as the sole determinant of the human activity, the author endeavours here, taking Chinese economics as a basis, to explain the course of historical events through the special spiritual attitude, through the working of the Chinese mind, while recognising that between the economic organisation of a nation and its mental characteristics there takes place a continual reaction. The religion of the Chinese, their morale, their family tradition and national customs, have imparted a quite special character to their economic life, which is markedly different from, for example, the American. The small holding is taken as a rule as the basis of their conception of agriculture into which the labour saving implements and machinery enter hardly at all and in which the most important factor is human labour. The development of capitalism and the relation of Chinese political economy with the world economy is accomplished, if slowly at least steadily, with the help of foreign capital. The author relates the central problem of Chinese political economy, viz., the overpopulation, to the mental characteristics of the race. Ways and means are indicated for relieving the situation in this respect, and in particular: a thoroughly well carried out home colonisation, a rationalised agriculture and a development of industry which might absorb the surplus rural population. The book is in fact a contribution to the philosophy of economics, based on concrete facts, but distinguished by real penetration and remarkable clearness of expression, so as to be of interest alike to the historian of civilisation and to the recorder of agrarian policy].

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PART II

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OF

AGRICULTURAL ECONOMICS AND SOCIOLOGY

CO-OPERATION AND ASSOCIATIONS

Agricultural Co-operation in the Irish Free State.

The Irish Free State (usually described in official documents under its Gaelic designation, *Saorstát Éireann*) consists of twenty-six out of the thirty two counties which constitute Ireland. It contains 17,019,154 acres of land and has a population of 2,971,992 persons, of whom 1,307,662 are described as "occupied persons, 12 years and over". Of these, 533,025 are designated as "farmers and relatives assisting", and 139,104 are accredited to "other agricultural occupations", making a total of 672,129 working either at the cultivation of the land, as farmer-owners, gardeners, etc., or aiding those who do so. The high proportion of land workers (over 22 per cent. of the inhabitants, over 51 per cent. of occupied persons and nearly 78 per cent. of a larger group into which occupied persons are subdivided, "producers, makers and repairers") gives to agriculture its great predominance over other callings in a country where the absence of mineral wealth, save to a very slight extent, greatly reduces the industrial possibilities. To maintain its population at or near the existing figure, it is therefore necessary to export a considerable proportion of agricultural produce and of the by-products of agriculture. Of these — whether for export or for home consumption — much the more important groups are live stock and live stock products, which, in the last official returns on the "Agricultural Output of Saorstát Éireann" (1926-27) are valued at £50,555,000, as against £8,264,000 for total crops and £5,938,000 for turf ("peat"), making £64,757,000 in all. In this (the live stock) group, milk products hold a most important place, being valued at £13,693,000, while "cattle slaughtered in or exported from Saorstát Éireann" are put at £13,809,000. It should perhaps be explained that the figures in this return do not include any part of the produce which was used for further agricultural production, whether that part was used on the farm or sold from one farmer to another within the area of the State.

In Ireland, for many years, dairying has mainly meant butter production. Unlike England, where urban areas absorb a large proportion of the milk supplies, the Irish Free State has few towns whose population rises above 20,000, and only two, Dublin and Cork, where the figures exceed 100,000; thus the whole milk, cream, skim and butter-milk "consumed by persons or exported" are valued in the "Agricultural Output" at £354,300, whilst the whole milk sold to creameries (mainly for manufacture into butter), and the butter made on farms, were valued

at £10,157,000; the total quantity of whole milk produced being estimated at 589,000,000 gallons, the quantity of butter made in creameries at 587,000 cwts. and the total butter produced at 1,491,000 cwts.

It should be added that creamery butter, which fetches higher prices than either "factory" (*i. e.*, blended) butters or "farmer's butter" (home made) is a constantly growing proportion of the whole, and that cheese is not made in any appreciable quantity in the Irish Free State. To see the relations of creamery butter making to the country as a whole in better perspective, it will be necessary to consult the export figures. The latest published are for the first ten months of 1930 which give the export as 365,665 cwts. valued at £2,345,361, as against 376,947 cwts valued at £3,092,072 for the corresponding months of 1929. During 1930 Irish butter in consonance with all butters marketed in Great Britain (to which country only it is exported), fell considerably in price when compared with 1929 — a serious loss to Irish dairy men and explicable partly as a reaction from the general agricultural slump and perhaps more directly as the result of unemployment and general business depression in the English cities. The other butters exported during the period were "factory" 109,371 cwts at £648,768 and "farmer's" 2,041 cwts. at £13,785. The full figures for 1930 will almost certainly exhibit a further decline in values.

The exports for the two full calendar years, 1928 and 1929, have also been published and these show that the quantity of creamery butter exported in 1929 was 426,279 cwts. and the value £3,512,805, whilst the corresponding figures for 1928 were 405,834 cwts. and £3,368,437 respectively. The total exports of all butters for these two respective years were 560,482 cwts. valued at £4,554,855 and 539,134 cwts. valued at £4,536,321. As the total value of the exports of all kinds for the same year (1929) were £46,803,448, it will be seen that butter alone constitutes nearly one-tenth of the exports of the State.

Two other facts about Irish farming may serve to make the conditions under which the co-operative movement, and more particularly co-operative dairying, is carried on clear to the reader: Irish farming is small farming and the average farmer is a very poor man. The latest date at which the measurements of holdings were available was 1917, but there is no reason to assume that any proportional changes of importance have since occurred, though, during the "boom" years following the close of the war, a good many farmers extended their acreage by purchase. (On the whole, such extensions seem rather to have added to farmers' burdens than to have improved their financial condition and in some districts, at least, newly acquired land has been left derelict and in others the purchase of small holdings by "landless" men has tended to keep the average low). In 1917 the number of holdings under 30 acres was 310,824 out of a total of 443,406. In England farms of 100 acres and under are reckoned as "small" farms, and taking that as a dividing line, the Irish count for 1917 would be 413,534, or about 90 % of the whole. Partly because of this, the remuneration to the workers in agriculture (mainly farmers, agricultural labourers being only occasionally and only seasonally employed on the smaller farms) is very low. The Agricultural Output computes it as about £88 per person occupied, or, allowing between one and two persons to each farm (frequently the farmer has the help of one relative), the income is little if anything above that computed for the industrial worker whose average is £121 *per annum* — and this computation charges against the farm, at city prices, produce consumed there. It will readily be seen that, on the smallest farms, even the smallest economies in production and very small increments of profit are of great importance. That is one reason why co-operation is essential to it.

§ 1. — THE BEGINNINGS OF THE CO-OPERATIVE MOVEMENT.

When, in 1889, Irish economists, led by Sir Horace Plunkett, eager to check emigration, and to raise the status and income of small farmers (then beginning to acquire the ownership of their holdings under a series of Acts of the British Parliament which continued to be passed until the first decade of the Twentieth Century and were further extended and developed after the Irish Free State had begun to function in 1922), first made a study of the new agricultural economy in continental countries and especially in Denmark, the fact which emerged most clearly was the necessity for combined or co-operative activities in agricultural production, credit and sale. It was on production that these pioneers chiefly concentrated and in it, particularly in regard to dairying, that their most notable successes were achieved. The history of the movement, which must here be only glanced at in a few sentences, may be roughly divided into four periods - the decade which closed the Nineteenth Century, the pre-war period up to 1913, the period of war, unsettlement and new constitutional development, up to 1923, and the post-war period, with which this article is mainly concerned, and which may be regarded as covering 1923-30. No complete survey of all the facts for the first period (1889-1900) has been written, but its objectives and the results then achieved were sketched by Sir Horace Plunkett in *Ireland and The New Century*, which, aiming at propaganda, attained sufficient historical significance to make it indispensable to students. The last year of the Nineteenth Century showed that the organising body, the Irish Agricultural Organisation Society, had succeeded in forming several hundred societies, mainly creameries, whose butter sales were shown as £703,826, to which a general turnover of £327,781 has to be added and a small business in credit through credit societies, bringing the total up to £1,038,877.

Though polemical matters, which cannot be debated here, political, agrarian and cultural, divided the farmers' aims during the second period between economic advancement on co-operative lines and other objectives, and retarded the growth of the movement, there was a steady rise in the figures for business done, which by 1913 had risen to £3,333,189, of which butter sales represented £2,323,441, and general turnover £954,256, as before there was a business in loans through credit societies to add. The next decade, 1913-23, was one of war, revolution, disturbance and, finally, a political settlement ultimately acceptable to the majority and with it the formation of the now existing State. More disturbing financially, perhaps, than the incursion into agricultural areas of men in arms, were the reactions of the European war, the rationing and derationing in Britain of the war and post-war years, the short boom and the longer slump in agricultural prices, the incertitude of the future in the farmers' minds, and the changing vicissitudes of organisation amongst a population swiftly but only very moderately enriched and as swiftly impoverished and politically and, even more, economically unsettled, whose market in Great Britain had also lost its normal equilibrium. The movement's turnover rose from £3,668,958 in 1914 to £7,574,438 in 1917, again to £14,604,852 in 1920 and fell back to £7,725,072 in 1923, the last date for which the Irish Agricultural Organisation Society had figures until those (collected in the autumn of 1930) for 1929.

§ 2. — THE IRISH AGRICULTURAL ORGANISATION SOCIETY.

Before making comparisons between the figures which end the post-war period and the latest figures available, two digressions are necessary: brief explanations of the purposes, scope and constitution of the Irish Agricultural Organisation Society and of the types of society which it organises and accepts for affiliation.

The Irish Agricultural Organisation Society was founded in 1894 after the co-operative pioneers were satisfied that their five years of initiating organisation had resulted in a movement of permanent value to Irish farmers. By that date 33 societies had been formed and, although the total sales of the creameries then working were only £151,852, there could be no doubt that the methods they were applying to agriculture were valuable and indeed necessary. These societies had modelled themselves on the Rochdale plan as regards capitalisation and finance, on Danish co-operation in regard to dairying business and on Raiffeisen principles in respect of credit, but with minor modifications in each case. In founding a Society to act as guardian to societies already formed and to promote other societies, the founders, who had come together at the request of Sir (then Mr.) Horace Plunkett during a Parliamentary Recess and had issued a Report outlining their proposals, set themselves a task of no slight difficulty. Polemical issues, which cannot be discussed here, had made association between public men of varying parties and different creeds very difficult, the public mind was occupied by grave problems which have since passed into history and, above all, the new public service for which the nascent movement called required to be financed. Mr. Plunkett's purse was drawn on freely and later, when the Department of Agriculture was established, his salary, as its Vice-President, was yearly donated. This financial problem, the crux of the situation, did not find an altogether adequate solution but, in forming a Society which should both assist the societies promoted by it and receive a certain amount of financial support from them, the initiators planned a device which, novel at that time, has been copied or adapted elsewhere: by England in the Agricultural Organisation Society, whose fosterage of co-operation after many years of work was taken over by the National Farmers' Union; in Scotland, by the Scottish Agricultural Organisation Society; in Wales by the Welsh Agricultural Organisation Society, in Finland by *Pellervo*, and ultimately in Ireland itself, after partition, when the Ulster Agricultural Organisation Society took over that portion of the work (previously done by the Irish Agricultural Organisation Society) in the six counties politically designated as Northern Ireland. It is a notable evidence of the unifying influences of co-operation that the relations between co-operators in each State subsequent to partition remained mutually cordial, as, indeed, they had continued to be even whilst citizens on both sides of the Ulster border had taken to arms on opposite sides of Irish political controversies.

The financing of the Irish Agricultural Organisation Society has, throughout, been worked on the following lines: the State was requested to look upon the organisation of an agriculture based on associations formed for combination in production, distribution and sale, as a public service, to be assisted from Government funds but not dominated (as the civil service must necessarily be) by Parliament; the societies themselves were expected to honour the principle of self-help by contributing to the upkeep of the parent body, and the public were offered an opportunity to aid a work of national importance and secure representation on the governing body by subscribing. The allocation of State funds in Ireland was a difficult matter to effect and it took time and work to wear down political opposition to the idea—time and work which, if fate had allowed them to be put into the constructive business of building up the societies, would have brought swifter moral and financial success to co-operation. The policy as originally conceived in Ireland had involved recognition by the Government of the expediency of "State aid for Self-help" but, although the Development and Road Improvement Funds Act had made specific provision for hypothecating public funds for the teaching of co-operation by organisations "not trading for profit", it was not until 1913

that the first annual subvention under this scheme was paid to the Irish Agricultural Organisation Society. It continued from that date until the setting up of the Irish Free State in 1922, and the British Treasury continued to act yearly on the recommendations of the body charged with the duty of advising as to the allocation of such grants ("the Development Commission") itself an advisory committee of the Treasury. And, on the cessation of these grants, the Free State Government, having taken over as part of the financial settlement an agreed proportion of the Development Grant, continued the subvention to the Irish Agricultural Organisation Society and on an extended scale. (The present grant covers the period 1926-31 at £8,500 per annum). The third source of revenue, public subscription, has for some years been a decreasing element in the income of the Society, which has, however, in the course of its career, drawn a good deal from personal contributions and has had public spirited help from idealistic citizens. It has been supported by a considerable majority of its own societies, in varying degrees of generosity, but, on the whole, in reasonable proportion to their income. It is a rule in the constitution of each society formed that it shall contribute to the parent body on a scale agreed to by the General Meeting (the ultimate authority in all matters of policy) but, though this rule is legally binding on the constituent societies, the Irish Agricultural Organisation Society has never sought by legal injunction to enforce it on any recalcitrant society, so that in fact, though not in form, these subscriptions are voluntary. The funds from this source increased in 1930 in spite of agricultural depression.

The constitution of the Irish Agricultural Organisation Society, formed originally mainly on the model of the Co-operation Union of Manchester, has been modified in minor points from time to time and when, on the establishment of the Irish Free State, negotiations for a continuance of the Development Grant were entered into, the State made its acquiescence in that claim contingent on certain conditions, the chief of which was a change in the mode of electing the representatives of societies and other subscribers to the Committee — which roughly corresponds to a Board of Directors, but unpaid — as well as a general agreement between the State and the Society as to the scope and tenor of the work to be undertaken. No direct representation of the State was sought for, except during a brief period of transition, and thus no direct responsibility for the Society's activities is accepted by the Administration. These activities have been varied in their application to different branches of farming during the whole period of the Society's existence since 1894, but the main lines of the original scheme have been consistently followed. The scheme aimed at is the formation of regional self-governed societies under model rules which provide for capitalisation and the carrying out, under committees elected by the General Meeting, which is (under the law) the dominating authority, of definitely specified business purposes such as (*e. g.*) the manufacture and sale of dairy produce or bacon, the sale of agricultural produce, the purchase and re-sale of agricultural requisites and equipment or such other necessities as the farm or the farmer require, and the co-operative uses of credit. All these societies, accept in their constitution the democratic vote (per person, not per share), a limitation by rule of the rate of interest (usually to 5 %), a limitation in the shareholding interest held by any one member, open membership (to any applicant farmer within the area of the society's operations but subject to the committee's power of veto in individual cases) and, generally, the limitations laid down by British law in the Industrial and Provident Societies Acts or, in the case of credit societies, certain regulations laid down by the British Treasury, authorising the raising of loans from members and others to be re-lent (subject to the Societies' Borrowing Powers

Act and to certain designated provisions of the Friendly Societies' Acts) to members only, "for the purposes of agriculture, horticulture or arboriculture". All this enabling legislation has been taken over by the Irish Free State in continuance of British Acts, but not all of it is fully adapted to its purposes and so a new Co-operative Act is pending. Societies can also accept for membership other societies, thus enabling them to work upon the principle of federal sale or purchase, etc.

A short outline of the methods of the Irish Agricultural Organisation Society must suffice to complete this part of our survey. Where a neighbourhood small enough to be easily organised and large enough to contain the potentialities of lucrative business has become aroused, by contact with an organiser or by reading or through the initiative of local leaders, to the fact that the farmers could, if co-operatively organised, advance their financial interests by, for instance, carrying out dairying through a co-operative society or could effect economies in purchase through a credit society or a society for joint purchase, the proof of their recognition of the potential virtues of such an organisation will manifest itself through a sufficient amount of capital being subscribed. This gives the Irish Agricultural Organisation Society — which will first have satisfied itself that the projected enterprise in the existing conditions has a fair prospect of success — reason to believe that the local farmers may be registered as a society and, registration under the Act having been arranged for, the organiser sees them through the first phases of their existence. The legal forms of incorporation are signed; a business committee is elected, the financial conditions essential to enable them to function are carried out, usually through a joint stock bank — with or without an advance from the State which, but only in certain contingencies, lends this form of support. A site is chosen for a creamery or store, buildings are erected, purchased, or rented, if necessary, plant is installed, a manager appointed and all minutiae incident to the starting of a new business are worked out. In most or all of these processes, the Irish Agricultural Organisation Society is called on to assist — often indeed to decide what is to be done. The Society, once launched as a going concern, is visited as often as funds, circumstances and local needs demand by officials of the Irish Agricultural Organisation Society, for business, accountancy and general purposes, and, if the concern is a productive society, such as a creamery, by officials of the State Department of Agriculture to advise on technical questions and inspect and report in accordance with Governmental regulations.

§ 3. — THE MOVEMENT IN THE PERIOD 1923-29.

The period whose comparative figures we are about to consider, 1923-29, was one of re-integration. Grave political unsettlement characterised the earlier years of this septennial period, and constructive work of all kinds had been retarded for a decade earlier. It is clear proof therefore of the suitability of co-operative dairying to the agricultural conditions of Ireland to find that the sale of butter by the co-operative creameries rose from £4,659,462 in 1922 to £5,034,285 in 1923. There was however, in 1923 a decline in the total turnover of the movement of over £1,200,000. This decline was mainly in general turnover, an apparent retrogression to be considered later. That year is the last for which statistics for co-operation for all Ireland have been published. The new political developments involved partition between the six counties of "Northern Ireland" and the remainder of the island, and the formation of the Ulster Agricultural Organisation Society marked out a circumscribed area in each State, as the field of operations for State-aided co-operation. To obtain strictly comparable figures, therefore, as between 1923 and 1929 for the Irish Free State, it is necessary to deduct from the totals for all Ireland the business

done in the earlier year in counties Antrim, Armagh, Down, Derry, Monaghan and Tyrone. Even when we have done this, the figures require to be used with some reserve. Not all of the returns furnished by the societies are vouched for, as, in a few cases, estimates have had to be accepted. Besides this, not every society, though each is under legal obligation to return its membership, trade and other balance sheet figures to the Registrar, has in fact done so and the totals quoted below are, therefore, probably an underestimate of the business done in the years compared. Taking, then, the available returns for the trade done in the Irish Free State, in 1923, we can cite, as minimum figures for sales of butter and cream, £3,635,065; for agricultural goods sold through dairying societies (creameries) £282,257; for agricultural requisites sold by co-operative agricultural societies, £959,448; for sales of poultry and eggs through societies formed for that purpose, £48,108; for bacon and meat (for three societies exclusively devoted to that business and, in particular, to bacon curing) £295,226, together with small "sundry" business, £8,154; bringing up the total for the sales of local societies to £5,228,258. Two other figures complete the full turnover: the trading federations (the Irish Agricultural Wholesale Society and the Irish Co-operative Agency Society) did an aggregate business of £877,637 and there were loans advanced to farmers, through credit societies of £24,161. These figures make a grand total of £6,130,056. Owing to a variety of causes, the Irish Agricultural Organisation Society have no statistical data available for 1924-28, but in 1929 we find an increased total of sales: the local societies account for £7,929,674, the federations (at this date, the Irish Agricultural Wholesale Society and the Irish Associated Creameries) for £3,157,648 giving an aggregate for trading societies of £11,087,322 against £6,105,895 for 1923 and when the loans from credit societies, £86,234, are added, the grand total for 1929 reaches £11,173,576.

Some observations are necessary to account for the remarkable percentage increase thus reached — about 67 — and some explanation of the items which made up the total. The principal source of increase is in the sales of butter and cream which rose in 1929 to £5,571,479, being more by nearly £1,800,000 than in 1923. So large an addition to the turnover of co-operative dairying societies (about 50 per cent) is very remarkable in face of the fact that a considerably reduced price for butter was obtainable in the later of the two years; it implies a considerable "change over" from proprietary to co-operative ownership in the creameries of the country, which is in fact what occurred.

§ 4. — THE TRANSFER OF PROPRIETARY CREAMERIES TO CO-OPERATIVE SOCIETIES.

In the winter of 1926-27 it became known that the owners of the largest blocks of dairying property in the State were willing, if a purchase could be effected at terms they considered equitable, to sell out their creamery buildings and plant, equipment and other assets, including houses, condensing plant and buildings, etc., and to have the milk supplies they had previously handled transferred to farmer-owned and farmer-controlled societies. The proposal was readily entertained and energetically followed up by the Irish Agricultural Organisation Society, but it involved obvious financial difficulties. Farmers, many of them hitherto unorganised, could not easily at a stroke capitalise an undertaking so wide spread, covering large areas in the province of Munster, and requiring immediate conversion to a new system. Moreover, not all of the retiring proprietors' properties were suitable for being acquired by societies each of which was autonomously worked within a confined area. The Irish Agricultural Organisation Society, acting in the initial stages as an intermediary between the proprietors and the farmers, virtually all of whom

were desirous of bringing the negotiations to a rapid and satisfactory conclusion, approached the Government, which, seeing in the proposed transfer a potential source of increased income to the dairy farmers (to whom, under the co-operative system, the full profits of the industry would, of course, accrue) and, therefore, an added impetus to an important industry, moved in the Dáil ("House of Commons") through the Minister for Agriculture, Mr. P. Hogan, whose declared policy has always included agricultural co-operation, for the financial and other powers necessary to implement the sales. The method adopted, with the ready support of the political Oppositions as well as of the Government's supporters, was to authorise certain civil servants as representative of the State to register themselves as a company (the Dairy Disposal Co.) so as to procure the buildings, plant and other assets of the proprietors, to secure the milk supply and to re-sell the properties so acquired to existing or newly formed co-operative societies, under the aegis of the Irish Agricultural Organisation Society; selling also, however, to private purchasers such properties as the farmers were unable or unwilling to take over or, alternatively, as a temporary measure, themselves to work such business (*e. g.*, condenseries) in the interests of the State (as purchaser), but not, of course, to the financial detriment of the milk suppliers. To enable the farmers to purchase, however, recourse to loan capital was necessary and to secure the advances to which the Dáil agreed it was necessary that the membership of the purchasing creameries should accept liability. This was agreed upon in advance of legislation and was made formally binding under the Creamery Act 1928, which stipulated that each member should be liable for a £1 share for every three cows owned by him, and, so as to prevent any new competitor from weakening the financial standing of a borrowing creamery, enacted that no new creamery should be established within the area worked by a society contracting for a loan from the Department of Agriculture (the lending body) save with the consent of the Minister. Also, to bridge the gap between the agreed purchase price for all the properties and the amounts farmers' societies might reasonably be expected to pay as purchase money on their acquisitions of creamery buildings, plant and milk supply (condenseries and certain other properties not being necessary for their purposes as manufacturers of butter), the State should make itself responsible for the difference, a sum estimated not to exceed £95,000. These negotiations naturally took some time to work out. Although the conversion was rapidly accomplished in most cases, the Dairy Disposal Board is still in charge of part of the original property and also works such creameries as were not purchased by the milk suppliers in their vicinity or closed as "redundant" having regard to existing co-operatives, in the joint interest of the State as owners for the time being; and ultimately of the farmer-suppliers. The immediate result, as has been seen, is a considerable rise in the co-operative business of the State. Indeed, the 50 per cent. increase in butter sales does not fully represent the value of the conversion, seeing that trading transactions carried on by the Dairy Disposal Co., even where not yet co-operatised, cannot be regarded as "proprietary business" in the exact sense and that probably not more than 10 per cent. of the creamery output of the Irish Free State would now come properly under that designation.

§ 5. — THE FEDERATIONS OF CO-OPERATIVE SOCIETIES.

It has been stated that the creamery output of the movement for 1929 is approximately 50 per cent above that for 1923, but the aggregate trading figure 67 per cent. The difference does not arise from increases in the business of the other local societies but mainly in the output of the Federations and specifically that

Society which handles the greater proportion of the butter produced in co-operative creameries. This feature of the situation demands comment. The older of the two federations, the Irish Agricultural Wholesale Society, has been 33 years in operation. Its principal objects, to purchase for the local societies, the supplies, and other requirements, seeds, manures and equipment of the farm, wholesale, re-distribute them to its member-societies at "bed-rock" prices and so enable them to ensure for their membership the cheapest and most efficient service, are being steadily fulfilled, though the business done falls far short of the movement's potentialities. In Ireland, as elsewhere, loyalty to co-operative principle, the disciplined support of the local society by its members and of the Federations by their constituent societies, is still only in process of development. The business of the Irish Agricultural Wholesale Society does not cover nearly 100 per cent. of the societies purchases. In 1923 it was £353,351; in 1928, £597,481, in 1929, £592,178. The societies' support has increased in recent years; the figure for 1929 representing an increase in quantities over 1928.

The same co-operative principle which underlies the Irish Agricultural Wholesale Society is the basis of the creamery federation. Joint sale of butter in the interests of the societies, through a common organisation and, with it, the elimination from the movement of inter competition and under-cutting and sale "on consignment". There was a body formed so far back as 1893, aiming at these results, but it never covered an adequate proportion of the societies' trade. (This society, the Irish Co-operative Agency Society, is still in trade). Following on the transfer of the proprietary creameries, a bigger effort was instituted in the formation of the Irish Associated Creameries, which, during 1928 and 1929, effected a business of £2,548,200 and £2,565,470 respectively. The method adopted by this Society was to arrange for definite contracts between the local creameries, which financed it, and the Irish Associated Creameries. Under these, about 80 per cent. of the creameries sold over sixty per cent. of the butter manufactured in co-operatives. This included a very large percentage of their own aggregate turnover, in fact nearly all of it except small consignments for which provisional exclusion was made in the contracts. The ultimate result of this experiment is still uncertain. The fact that not all the creameries participated has left the market still subject to under-cutting. "Free" creameries not merely remained outside and competed against the Federation but engaged in a press controversy opposing the course pursued by the adherents of federal sale. A more perturbing influence on the contracting creameries, most of which, despite difficult marketing, honoured their contracts, was the virtual collapse of prices in 1930, due to the pressure of the world market, to "over-production" (in the perhaps rather inexact use of that word), to "under consumption" (in relation to supply) and to unemployment in Great Britain. These factors effected even the price of Danish butter (an all-the-year-round product) but less than Irish (which is seasonal) or New Zealand or Australian. The conditions of the butter market and the consequent serious price reactions on Irish dairying have prompted the Government to appoint a Commission "the Butter Marketing Tribunal", to collect evidence, examine the situation and report. Their Report is awaited as we write, and pending its appearance the situation cannot be more exhaustively analysed. Also, a collateral question is now being considered. The Tariff Commission, a body charged with investigating claims made by manufacturers for tariffs on their produce, has been requested to consider favourably a proposal of an import duty of four pence per lb. on butter. Pending their examination of the evidence to be placed before them and their ultimate recommendation, they have requested the Government to anticipate and prevent forestalling — i. e..

flooding the market with imported produce — a practice almost inevitable where foreign producers foresee the possibility that a tariff wall may be erected against them. As an embargo is not provided for in administrative machinery and would involve legislation and delay, the Government, with the support of the Oppositions, have as a temporary, prohibitive measure, fixed a tariff of £5 per cwt. on imported butter. But whether the Commission will ultimately recommend a permanent import duty cannot be foreseen. Should they not do so, the tariff now agreed upon will be cancelled ; alternatively, it may be considerably reduced.

§ 6. — MINOR CO-OPERATIVE ACTIVITIES.

It will be seen, then, that the increased turnover in sales for the co-operative movement in 1929 is due, firstly, to the new dairying areas brought within the co-operative system and, secondly, to the big business effected by Irish Associated Creameries. Certain minor increases in the business of other co-operative types enter into the respective aggregates of the years under observation. That for the Irish Agricultural Wholesale Society has already been dealt with. The creameries in 1923 sold, besides butter, goods mainly agricultural, value for £282,257 and the co-operative agricultural societies' total business is shewn as £959,448, a total for this class of trade of £1,241,705, whilst the similar figures for 1929 are £959,275 and £648,049, total £1,607,324. Sales of eggs other than those disposed of by co-operative poultry societies are to a small extent included in these figures and cannot be separately calculated. The percentage increase is, it will be noted, small. This is accounted for partly by general economic conditions and partly by the constant and unavoidable preoccupation of the Irish Agricultural Organisation Society with dairying, the branch of co-operative trading carried out under its aegis which is the most widespread, the most financially important and which makes relatively the least drain on its limited finances, as the dairying societies are able to pay in affiliation fees and subscriptions a considerable fraction of these costs of travelling, organising and inspection incurred by the parent Society in its fosterage of them. This the agricultural societies cannot do. There are other reasons, too, why those societies which aim rather at effecting economies for their members in the costs of fertilisers, seeds, equipment and other necessities than at adding directly (as do the creameries) to their cash income have had a more difficult and less lucrative career. Many of them were started in the war and earlier post-war years, when the costs of goods in rural areas had come to render the purchase of certain farming necessities almost prohibitive. Yielding to the pressure of farmers all over the country, the Irish Agricultural Organisation Society accepted for affiliation a larger number of societies than its limited and overworked staff found that it could adequately superintend. These societies, in many cases under-capitalised, aiming chiefly at keeping down retail prices in the small rural areas they attempted to cater for, were managed by young or inexperienced managers and by committees of farmers, some of whom had but little experience of business and perhaps less of co-operation. Moreover, the hurried manner of their organisation gave organisers insufficient opportunity to instil into the membership an understanding loyalty to and a direct insight into the principles of co-operation, neglect or ignorance of which always proves to be bad business as well as leading to a lack of co-operative discipline. The immediate effects of these societies on the position of farmers within their ambit were often significant and valuable : they brought prices down to a point at which farmers could satisfy their needs without exorbitant costs. But the competing retailers, realising that no other aim animated the rank and file of the membership than to buy cheaply and that so long as a co-operative society

exists in an out-of-the-way place it becomes the price-fixer for the vicinity, often reduced their prices temporarily to or below the co-operative level. In such cases members, finding they could now purchase as cheaply from retailers as from the co-operative store, gave their orders to the local shops (some of them, perhaps, run by their own relatives, others having a "pull" over those of the society's members who were in their debt) and by starving their own society of trade, of capital and of cash (due for goods bought on credit) brought about its demise. There were many liquidations, hastened probably by the general unsettlement of the post-war years and by the impossibility on the part of the Irish Agricultural Organisation Society of finding finances adequate to enable it to give societies the attention which this branch of co-operative effort required and would in time repay. At present the inspection of these societies is carried on by the Irish Agricultural Wholesale Society, and their importance is reflected in its balance sheets. But it is worth noting that, whilst as we have shown there has been a decline in their total trade, that deficiency is more than countered by the agricultural (as distinguished from the dairying) trade of the creameries so that on balance business of this character shows an increase of about 22 % on 1929 — a proportion whose significance will be better understood if it is remembered that the costs of living figures of the latter year were about 5 per cent. less than those of 1923, and the prices of goods retailed by these societies were also lower. There are other slight changes in the figures of these years; but the only one perhaps calling for comment is an increase for the societies (of which there are three) selling pig or meat products, or both, from £295,226 to £713,844. This increase is mainly due to the business of Irish Meat Ltd., an enterprise only recently doing an active business, which aims at securing for pig breeders in Munster and South East Leinster the best prices for bacon pigs (less, of course, costs of production and a small fixed interest on the capital supplied by the farmers themselves).

In all the productive societies under notice, of course the main ultimate gain is never the interest on capital, but always the return to the producer of the full value of his produce, whether directly in the price paid for raw material, or indirectly in the form a so-called "bonus" on trade, which may be looked upon as a distribution of profits to the producer in due proportion to the raw material supplied or more exactly — since it is claimed that these are not profit-making business in the, correct use of that term — a disbursement to the producer of the actual proceeds (less the costs of running and capitalising the business) obtained from manufacturing his milk into butter or his pigs into bacon. The Societies which are distributive as distinct from productive aim at procuring for him the materials of the farming industry at wholesale prices.

§ 7. — THE TOTAL TURNOVER OF THE CO-OPERATIVE MOVEMENT.

All the trading now under review works out at £11,173,556 as against £6,105,895, or, if the sales of local societies only be included and those of the two federations omitted, there is then a business of £7,929,674 for 1929 and of £5,228,258 for 1923. It is on the latter computation that the figures here cited, though not fully inclusive, can be relied on to the extent, at least, of establishing a rough proportion between the value of the co-operative trading of these two years of five to three in favour of the later one. Another figure is needed to complete this brief survey. A few agricultural banks or credit societies are working over nearly the whole period of the movement's activities. One of the causes which prevented the co-operative agricultural societies from making further headway has been responsible for a slowing down of credit co-operation also: the inability of the propa-

gandist body during times of economic stress to finance an activity indirectly economic but not directly money-bringing, *i. e.*, the organisation and inspection of societies neither actually trading nor directly affecting prices. Other causes also contributed: the fact that it is difficult to procure farming credits during an agricultural slump, the fact (on the other hand) that during the agricultural boom farmers did not need to borrow, lost interest in credit societies and allowed them to lapse. Two fillips have, however, been given to this important, if humble and slender, form of relief for small farmers in need of economic short term credits. The Government, finding it necessary to enable farmers to re-store lands, denuded of their cattle and sheep by reason of fluke disease and similar causes (brought on by a succession of severe winters in 1925 and subsequent years) utilised existing and new credit societies for the granting of loans for the purchase of stock and similar purposes, the advances being on the basis of £2 for each £1 locally deposited in the credit society. (Subsequently, where owing to poverty or other causes the deposits were not forthcoming, the deposit proviso was waived) In the first classification the societies were allowed to borrow free of interest for three years, in the second (non deposit societies) at 3 per cent. The advances were re-lent at 5 % up to a maximum loan per borrower of £50. Loans amounting to £84,795 in all were thus advanced and, in the view of the Department of Agriculture, with considerable benefit to thousands of farmers, thus enabled to "re-populate" their fields with cattle and sheep. These loans are in course of repayment. A later development has been a scheme whereby creameries can borrow from the Agricultural Credit Corporation — a registered Company largely State-financed for making advances to farmers — sums to be advanced to members on the security of their milk, handled by the creameries for purposes of butter making, such advances to be a debt due from the dairying society (the nominal borrower) to the Corporation, after the society's committee (on the recommendation of an *ad hoc* sub-committee, which investigates applications for the loans) endorses the individual member's request. Including these loans, which are portion of the creameries' business, loans have been made to individual members by credit societies amounting to £86,234 in 1929 against £24,161 in 1923.

We are now in a position to sum up broadly the financial results for 1929. A grand total is reached for that year of £11,173,556 compared with £6,130,056 for 1923. Neither total is absolutely inclusive of all the business done, but no omissions or revisions would affect these proportions appreciably, each of the totals cited being probably a few thousands below the actual net business done, if every society's turnover were known and available for inclusion. Only in two years, when costs of living were very high, has the movement had so large a turnover. These figures are a striking commentary on the importance to Irish farmers of agricultural co-operation. The very serious condition of farming everywhere precludes taking too optimistic a view of the near future and it would be scarcely reasonable to hope that the results of the year now drawing to an end will disclose equally satisfactory returns. Nevertheless the value to the Irish farmer of co-operative production, sale, purchase and credit remain unimpaired. Through it alone can he hope to obtain reasonable control of his industry, reduce his working expenses by eliminating unnecessary middle costings, and place himself so far in command of the working of his industry as world conditions permit. It may be found that the severe drop in butter prices will seriously reduce the returns for Irish dairying for 1930, but the greater the financial strain to which the farmer is subjected, the greater is his need for the economies which the co-operative system places at his hand.

Cooperative Marketing Associations in the United States.

In the Monthly Bulletin of Agricultural Economics and Sociology of February 1930 an account was given of co-operative marketing associations in the United States of America with special reference to the basis of payment for produce, or the proportion in which the total returns obtained by sale of the various products is distributed to the members in the respective associations.

In the present note it is intended to reproduce some statistical and other information relating to these associations as supplied by a circular published in August 1930 by the United States Department of Agriculture.

The factors by which growth or decline of any type of co-operation have been usually measured include the number of associations membership and amount of business. The fluctuating and unstable price levels which have obtained since 1914 render the amount of business transacted a highly uncertain measure for determining gains and losses in co-operative marketing or purchasing. The trends in co-operative activity are in fact now better indicated by the quantities of products handled year by year, and accordingly this measure has been as far as possible adopted in the account lately published of co-operative marketing and purchasing of agricultural products during the period 1920 to 1930 in the United States.

The total number of farmers' business associations in existence in the different States in 1930 was 12,000, nearly three-fourths being found in the East or West North Central States, viz., 3,456 in the States of Ohio, Indiana, Illinois, Michigan and Wisconsin, and 5,327 in the States of Minnesota, Iowa, Missouri, North and South Dakota, Nebraska and Kansas. These associations carry on marketing operations in respect of cotton and cotton products (199), dairy produce (1,458), forage crops (11), fruit and vegetables (1,384), grains, including rice and dried beans (3,448), livestock (2,153), nuts (44), poultry and poultry produce (157), tobacco (15), wool (131). In the total of 12,000 are also reckoned 546 miscellaneous purchasing associations, the latter including farmers' co-operative stores.

As compared with the returns in 1928, there have been marked increases in the number of cotton associations, the fruit and vegetable associations, and the livestock shipping associations, the 1928 numbers being respectively cotton 125, fruit and vegetables, 1,269 and livestock 2,012. The numbers of associations for co-operative marketing of poultry and eggs, and for wool marketing have also increased. The increase in the number of cotton associations is largely accounted for by the organisation of co-operative cotton ginneries in several of the Southern States. An increase in the number of miscellaneous buying associations noticeable since 1925 is largely the result of the organisation of associations for the purchase of petroleum products (for agricultural machines, etc.). The total number of these associations in 1928 was 11,400.

The estimated aggregate number of members in 1928 was 3,000,000, representing approximately 2,000,000 farmers, who in many cases belong to more than one association of the kind. In Minnesota for example 82 per cent. of the farmers participating in co-operative activity are members of two or more associations, 47 per cent. being members of more than two; other North Central States, as well as California, are characterised by a high percentage of farmers belonging to more than one association.

The total business transacted by the 11,400 marketing associations during the season 1927-28 is estimated at \$2,300,000,000, which is less by \$1,000,000,000 than the estimate for 10,803 associations for the 1925-26 marketing season. This reduc-

tion is due to a lower price level, the index-number of farm prices in 1925 being 147 and in 1928, 139.

Some detail of the activities of the associations dealing with the different commodities may now be given separately the data for the most part being available up to 1928.

Cotton. — Co-operative cotton marketing associations have decreased in number since 1915, but the associations functioning to-day are transacting a much larger business annually than was the case 14 years ago. The 213 associations reported in 1915 had an estimated membership of 18,400 and were transacting business estimated at \$1,502,007 a year. The 125 associations returned by the Department in 1928 had an estimated membership of 140,000 and for the marketing season 1927-28 transacted business totalling nearly \$100,000,000. The leading States concerned were in order Oklahoma, Texas, Georgia and Alabama. By far the greater part of the business handled during the period 1921-1929 by the cotton associations is included in the sales of 16 large-scale organisations, the cotton received by these over the period amounting to 7,813,215 bales, or 7.6 per cent. of the total ginnings for the eight years.

The activities of twelve of the large scale associations were co-ordinated through the American Cotton Growers' Exchange, Dallas (Texas), a federation which, as from 1 February 1930, was superseded by the American Cotton Co-operative Association which was incorporated with authorised capital stock of \$30,000,000 to function as a central agency for the marketing of cotton received by stockholder corporations, including fourteen State associations.

Dairy Products — The estimated business for 2,500 associations listed in 1928 was \$640,000,000, as compared with \$535,000,000 for 2,197 associations listed in 1925. These figures indicate an increase in amount of business of approximately 20 per cent for the three years. The associations listed in 1928 were classed for convenience into five groups: 1. associations operating creameries or engaged in the marketing of butter; 2. associations functioning in connection with cheese factories; 3. associations engaged in receiving, processing or distributing of fluid milk; 4. associations of milk producers for bargaining with dealers in regard to the prices to be received by producers for products; 5. miscellaneous associations. The largest group is that of the co-operative *creameries*, accounting for 1,400 out of an aggregate total of 2,500 associations. More than 80 per cent. of the creameries are found in the three adjoining States of Minnesota, Iowa and Wisconsin. The 1,400 creameries handled about 500,000,000 pounds of butter in 1928, and those in the above three States, alike in 1926 and in 1928, handled more than 73 per cent. of the creamery butter made and marketed by co-operative societies.

About 34 per cent of the creamery butter made in the United States in 1928 was produced and marketed by co-operative enterprises. The average number of pounds of butter made per association increased from 337,601 in 1927 to 356,721 in 1928.

The total quantity of cheese handled in 1928 by the 740 co-operative *cheese factories* listed by the Department was approximately 120,000,000 pounds. As between 1926 and 1928, however, the actual proportion of cheese manufactured and marketed by co-operative activity declined from 32.5 to 28.1 per cent. of the whole cheese production of the United States. The average output per co-operative cheese factory also declined by nearly 10,000 pounds during the two years ended 1928, this decline being especially pronounced in Wisconsin and Minnesota.

Milk distributing associations, or associations of producers for collection of fluid milk and marketing either at wholesale or retail or both in the larger cities are of

fairly recent origin, the oldest organisation of this type, the 'Twin City Milk Producers' Association in St. Paul, Minnesota, having been organised in 1917. The largest is now the Dairymen's League Co-operative Association, New York, which during 1929 handled 2,578,345,604 pounds of milk. Five other milk distributing associations handled over 30,000,000 pounds of fluid milk in 1929.

A considerable quantity of fluid milk is also marketed co-operatively through *milk bargaining associations*, which by conference between producers and dealers determine the prices to be paid to the producers according to the season. There are nearly fifty of these associations, and seven of them have marketed more than 100,000,000 pounds of milk each in 1929.

Fruit and Vegetable Associations. — A somewhat larger number of associations engaged in the marketing of fruits and vegetables was listed by the Department of Agriculture in 1928 than in 1925. The figures for the two years are as follows : number of associations in 1925, 1,237 ; in 1928, 1,269 ; membership estimated in 1925 at 180,000, in 1928 at 215,000, estimated value of business done in 1925, \$280,000,000, in 1928, \$300,000,000. These increases are rather the result of more careful reporting than of any material development. Of the associations active in 1928 the greater number in any of State were found in California, there being 285 fruit and vegetable co-operative marketing associations ; in California out of a total of 1,269 for the whole of the United States, Colorado was the second State in importance in this respect and Florida the third. As regards *citrus fruit*, the returns from 6 associations indicate that the number of packed boxes marketed co-operatively has varied from about 16,755,850 to 39,660,841 during the nine-year period from 1920 to 1929. The production of citrus fruit increased nearly 50 per cent. from 1922-23 to 1928-29. The proportion of the whole production of the States handled co-operatively has varied in the nine-year period between 62.9 per cent. and 51.3 per cent. and in 1928-29 stood at 53.3. On other hand, in California the Fruit Growers' Exchange handles about 75 per cent of the total quantities exported from that State, and the Exchange with another large scale co-operative enterprise handles 85 per cent. of these quantities.

Co-operative marketing of *apples* is largely carried on in the Pacific North West States of Washington and Oregon with a smaller proportion in California. Over two and a half million boxes were handled in 1929-30 by a Washington association, as well as over one million by each of two other associations in the same State, similar quantities having been maintained since 1925-26.

Five associations have reported on the co-operative marketing of *grapes* for the years 1920 to 1929. These associations marketed over 155,000,000 pounds of grapes in 1920 and more than 230,000,000 in 1928, in 1929 the figure reached was 183,986,690 pounds.

Marketing data relating to *strawberries* for the period 1921 to 1928 are available only for two associations, one in California and one in Washington. The number of packages handled by these organisations during the eight-year period increased by 32 per cent. There are however differences in the unit of measurement which make comparison difficult.

These associations which have reported *potato* shipments for the nine years 1920-21 to 1928-29 handled 30 per cent. more potatoes in 1928-29 than at the beginning of the period. Potato production in the United States was slightly larger in 1928 than in 1920.

It may here be added that the marketing of the superior kinds of *nuts* is largely in the hands of co-operative farmers' associations, 98.4 per cent. of the almonds produced in the United States being marketed co-operatively in 1929-30 and 71.1

per cent. of walnuts. Forty associations, the majority in California, were engaged in marketing nuts in 1927-28, their estimated membership being 15,000 and the value of the business transacted in that season being \$14,600,000.

Associations marketing grain. The Wheat Pools. — In 1928 there were listed by the United States Department of Agriculture, 3,455 associations engaged in the marketing of grain with an estimated membership of 900,000, and transacting business in 1927-28 to the amount of \$680,000,000. At the beginning of 1930 the number of associations listed was 3,448. More than 85 per cent. of all the grain marketing associations were located in the North Central States.

Since 1920, there have been formed for the marketing of wheat 14 large-scale centralised associations, or pools, seven of which are still in operation. These pools have marketed approximately 146,000,000 bushels of wheat during the eight year period 1921-22 to 1928-29. The total volume of wheat received by these organisations in the separate years is shown as follows.

Marketing Season	Bushels	Number of pools reporting	Pool wheat in percentage of total wheat handled
1921-22	11,372,768	3	2.3
1922-23	20,293,610	10	3.5
1923-24	24,446,621	11	4.8
1924-25	27,967,244	10	4.4
1925-26	16,823,560	9	3.5
1926-27	17,494,726	9	3.0
1927-28	12,335,546	8	1.9
1928-29	14,879,859	7	2.2

In addition thirteen sales agencies have been engaged in grain marketing for one or more years since 1920, handling a quantity of grain amounting to about 40,000,000 bushels a year.

Livestock marketing associations. There are in existence more than 2,000 local livestock shipping associations, with an estimated membership in 1928 of 450,000, forwarding to market livestock to the value of \$320,000,000. More than 85 per cent of the total membership was in the eight States of Iowa, Illinois, Minnesota, Missouri, Ohio, Indiana, Wisconsin and Michigan, and 88 per cent of the livestock shipped co-operatively was forwarded to market by the associations in the same eight States.

The information available on the co-operative selling of livestock on the terminal markets has been compiled for the years since 1918 and shows that 13,600,722 cattle and calves, 60,106,146 hogs, and 10,763,977 sheep have been marketed through co-operative agencies on 24 markets, to a total sales value of more than \$1,900,000,000. During the same period 2,289,542 animals have been

purchased by co-operative associations in the central market for farmers requiring stock for breeding and for fattening, the total value of these purchases being approximately \$54,500,000. The total business done by the livestock sales agencies for the 12-year period is approximately \$2,100,000,000.

Twenty-eight co-operative terminal sales agencies operated on 22 markets during 1929, receiving cattle, calves, hogs, and sheep on consignment from livestock-shipping associations and from individual shippers. In addition these associations buy animals for breeding and fattening purposes on behalf of the Corn Belt farmers. The total business for the year 1929 was \$314,522,635 compared with \$280,152,931, for 1928.

Poultry and egg marketing associations. — Since 1928 information has been received of 139 associations in 32 States engaged in receiving and marketing eggs or poultry or both. Of these, 34 are strictly egg-marketing organisations, 16 are primarily engaged in marketing live poultry and 16 mainly concerned with dressed poultry. Sixty-six handle both eggs and poultry: four arrange for hatching and marketing baby chicks and two associations market ducks only. A larger quantity of eggs has been handled co-operatively each year since 1920 and total egg sales have increased greatly. In 1928 some 50 associations marketed more than 4,000,000 cases of eggs with a sales value of nearly \$40,000,000, i. e., four times the value of the sales reported for the associations existing in 1920.

The following table gives more complete data for the different types of association.

	Associations reporting sales of eggs	Value of sales dollars	Associations reporting sales of live poultry	Value of sales dollars	Associations reporting sales of dressed poultry	Value of sales dollars
1920	4	9,706,396	1	46,361	—	—
1921	6	10,480,165	2	217,644	—	—
1922	9	11,435,272	4	303,783	1	134,867
1923	11	13,303,058	5	540,302	3	469,000
1924	41	21,303,487	25	3,026,408	10	1,029,078
1925	52	28,180,032	30	2,818,608	16	3,656,426
1926	48	28,858,919	33	3,959,024	20	6,089,599
1927	29	15,948,274	20	2,026,803	15	2,427,538
1928	51	39,564,224	39	3,647,217	22	3,334,434

The greater part of the eggs marketed co-operatively are handled through a few large-scale organisations. For six associations the number of cases received have increased since 1920 by 290 per cent., standing in 1928 at nearly three million cases. Co-operative poultry marketing on a large scale is of rather recent development. Approximately 15,000,000 pounds of live poultry was marketed by 38 associations reporting for 1928 and about 11,000,000 pounds of dressed poultry by 22 associations in the same year. Most of the poultry marketing associations at in the States west of the Mississippi River, the greatest activity being in Missouri.

Tobacco-marketing associations. — Only two of the seven large scale tobacco associations that were functioning in 1923, 1924 and 1925 are still active, viz. the Maryland Tobacco Growers' Association, Baltimore, which was organised in 1919, and the Northern Wisconsin Co-operative Tobacco Pool, Madison. The following statement shows the number of associations operating each year, and the quantities of tobacco received over the period 1921-9-20 to 1928-29.

	Number of associations operating	Quantities of tobacco received
1919-20	1	6,533,100 pounds
1920-21	1	8,088,600 »
1921-22	2	129,414,613 »
1922-23	6	607,890,558 »
1923-24	7	700,404,681 »
1924-25	7	430,423,281 »
1925-26	5	276,618,136 »
1926-27	4	188,263,175 »
1927-28	2	21,804,926 »
1928-29	2	26,192,124 »

The estimated membership of the two associations in operation in 1919-20 was 3,330 ; that of the seven in operation in 1924-25 was 924,000. Less than 7,000,000 pounds of tobacco of the 1919 crop were handled by the co-operative associations, and more than 700,000,000 pounds of the 1923 crops.

Wool-marketing associations. — Co-operative wool marketing was at its height in 1925 and 1926. More wool producers were interested in the co-operative method of marketing in 1925 than in any previous or in any succeeding year, and more wool was marketed through co-operative organisations in 1926 than in any other year before or since. The wool clip of 1926 was considerably larger than for the preceding year which probably accounts for the larger quantity marketed in this peak year of 1926.

The following table shows the associations reporting, the number of wool-producers consigning wool to the associations, the quantities of wool marketed, and the sales value for the years 1920-1928.

	Associations reporting	Number of consignors	Associations reporting	Wool marketed pounds	Associations reporting	Sales value dollars
1920	12	17,809	12	6,101,042	14	2,054,478
1921	19	21,470	23	12,579,684	27	3,757,062
1922	28	15,151	40	10,119,991	38	4,010,913
1923	33	21,868	45	18,024,306	43	5,660,932
1924	39	21,347	53	16,684,684	53	6,952,166
1925	45	24,391	52	24,015,984	52	9,391,341
1926	48	26,464	55	25,026,985	55	7,590,854
1927	43	12,854	54	21,781,142	55	4,796,073
1928	55	16,541	62	15,788,289	55	2,460,430

There has been a considerable shift in the area represented by co-operative wool marketing since 1920. In that year only 21 per cent. of the wool sold through co-operative channels was produced west of the States extending from Minnesota to Louisiana. In the following year 31 per cent. of the wool to be marketed co-operatively came from the States in the Great Plains area, the Rocky Mountain region and the Pacific coast region. This percentage continued to increase, until in 1927 it was 73 per cent. Hence in seven years co-operative wool marketing shifted from the Eastern to the Western States.

There are now about 100 associations, large or small, primarily engaged in the marketing of wool, and to be found in most of the States other than those which form the Cotton Belt. They handle about 20,000,000 pounds of wool annually. In several instances the larger associations, numbering twenty in all, receive the fleeces of the members of the smaller organisations, grade it and sell it along with the wool delivered by their own members. Some of these large associations cover a whole State or parts of adjoining States.

Terminal market sales agencies receive consignments of wool from co-operative associations, county pools and individual growers. They sell the wool and return to the consigning organisations or persons the proceeds of sales minus operating expenses. A considerable portion of the annual co-operative clip is sold through such an agency operating on the Boston market.

The percentage of the total clip marketed co-operatively varied from 2.5 per cent. in 1920 to 9.8 per cent. in 1925, in 1926 it was 9.6 in 1927 it was 7.7 and in 1928 it fell to 5.3. The quantity of wool marketed co-operatively per consignor has varied from less than 400 pounds in 1920 to more than 1,000 pounds in 1927. The average quantity for the rather over fifty associations which have reported both number of consignors and pounds of wool for all or some of the years since 1920 is 686 pounds.

Co-operative purchasing. — Collective purchasing of farm supplies is being done to an increasing extent by large-scale associations formed for the purpose. The first of the newer type of purchasing associations, the Fruit Growers' Supply Company was formed in 1907 by members of the California Fruit Growers Exchange at Los Angeles for the purpose of supplying themselves at lowest cost possible with their orchard and packing house requisites. This association is now doing an annual business of over \$10,000,000. In 1912 poultry breeders near Los Angeles set up an association to buy the feeds, etc. required. In 1927 similar movements were started in New England and in Missouri, the one developing into the Eastern States Farmers' Exchange, Springfield (Mass.), and the other into the Missouri Farmers' Association, Columbia (Mo.), both doing business on an important scale. In 1920 the Co-operative Grange League Federation Exchange, Ithaca (N. Y.) was organised, now one of the largest of the buying associations.

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ELSWORTH R. H. Co-operative Marketing and Purchasing 1920-1930 United States Department of Agriculture. Circular No. 121, Washington, D. C. August 1930.

MARKETING OF AGRICULTURAL PRODUCE.

The Privileged Company for the Export of Agricultural Products in Yugoslavia.

Previous to the foundation of the Privileged Company for Export, the export trade in wheat in Yugoslavia was almost unorganised. The farmer, who was without capital resources, was usually obliged to sell his wheat immediately after the harvest, when the prices are much lower than in the following months of the farming year. As the national export firms and the agricultural organisations had not sufficient funds available and as there was also no elevator accommodation in the country it was not possible to ensure the export of all crop surpluses. The foreign firms, the resources of which were greater, usually profited by this situation. In these cir-

cumstances, the country frequently could not export all the surplus and scarcely ever obtained the prices ruling on the world market. These conditions affecting Yugoslav agriculture have been greatly aggravated during the last two years of the world agricultural crisis. With a view to remedying the chief consequences of the crisis, *viz.*, (1) the shortage of cheap long-term credit ; (2) the indebtedness of farmers owing to the continual decline in the price of cereals, which had fallen even below the cost of production, and (3) the difficulty of marketing the surplus products on foreign markets, the Government during the last two years has embarked on a series of energetic measures. Special attention may be called among these to: the foundation of the Privileged Agricultural Bank which is intended to provide a solution of the problem of agricultural credit, and the formation of the Privileged Company for the Export of Agricultural Products. The main functions of the Company are: 1 the rationalisation of production and of trade in the export of agricultural products, and 2. protection of the prices of these products.

§ 1. — THE INTERNAL STRUCTURE OF THE PRIVILEGED COMPANY FOR THE EXPORT OF AGRICULTURAL PRODUCTS.

On the proposal of the National Union of Agricultural Co-operative Societies, of the Association of Yugoslav Exporters and of the National Office for the development of Foreign Trade, the Government at the end of 1929 decided to form the Privileged Company for the Export of Agricultural Products. The new company has been founded with a capital of 30 million paper dinars, divided into 30,000 shares assigned by name of 1,000 dinars each. This capital has been in part subscribed by the State and in part by agricultural co-operative societies and export firms. Art. 5 of the Constitution limits the right of participation to persons of Yugoslav nationality. The Company in addition has a credit of 20 million dinars at the Ministry of Trade and a credit of 50 million at 4 per cent. at the National Bank. Hence at the beginning of its activity the Company had at its disposal a capital of 100 million dinars. The Privileged Agricultural Bank had moreover resolved to make a grant to the Company of a credit of 200 millions at 4 per cent., for the special purpose of erecting elevators, general warehouses, etc. In case of necessity the Company can also count on credit from the Mortgage Bank of the State and from the Postal Savings Banks, in exceptional circumstances it may also accept foreign loans.

The financial structure thus makes it possible for the Company to engage on a wide activity for placing on the foreign market at the proper time and on the most advantageous terms the surpluses of production, and at the same time to ensure the best price to the farmers.

According to the Constitution the number of the members of the Administrative Council is fixed at 18, appointed in the following manner: four members are appointed by the Government, two are elected by the general meeting from candidates proposed by the Ministers of Trade and Industry and another 12 members are elected by the general meeting, of which six are representatives of the agricultural co-operative societies, and six belong to the Association of Exporters, all persons elected to be shareholders of the Company.

§ 2. — OBJECTS AND FUNCTIONS OF THE COMPANY. °

The objects of the Company are defined as follows by Art. 9 of its Constitution:

(1) the Company is to undertake the direct placing on the markets of the importing countries of agricultural products, the sale of such products at the best price obtainable and on the most favourable terms; such placing to be done mainly

on commission for the groups constituting the Company, *viz.*, the agricultural co-operative societies, the agricultural associations, the exporting firms, the exporters, etc.);

(2) in special cases, if the interests of the country so require (for example, for the maintenance of prices), the Company may make purchases on its own account, may grant credits on the merchandise or may intervene with third parties so as to obtain these credits;

(3) the Company is to take part in the construction of elevators;

(4) to promote proper grading and standardisation of agricultural products;

(5) to provide for the transport of agricultural products (insurance, consignment, transshipping, etc.

For the carrying out of this programme, the Company is expected moreover to make estimates of the shortages existing in foreign trade, dealing however only with the large export supplies, and leaving to the exporters all provision necessary, for the exporting of smaller quantities into neighbouring countries. The Company may also effect, on the account of exporters, sale on commission in neighbouring countries with which the exporters have no direct relations.

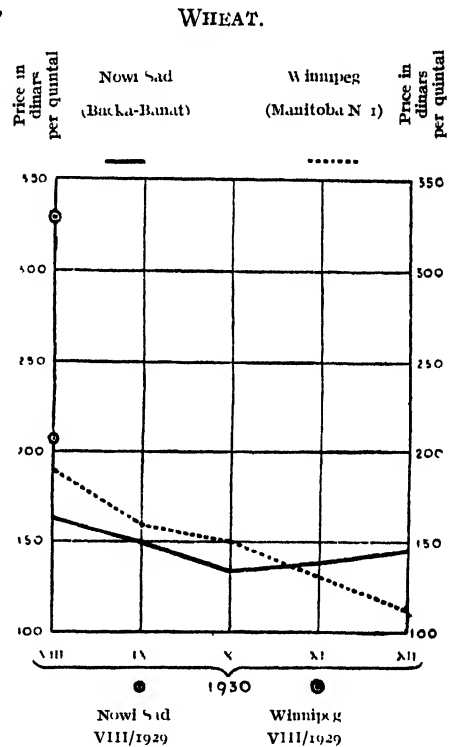
The agricultural co-operative societies may entrust to the Company in deposit or on commission the principal agricultural products, for the purpose of effecting sales on foreign markets in such a way that any farmer, who is a member of such society, may have the certainty of receiving for his products the prices of the world market. In this way a close collaboration is ensured between the principal economic organisations of Yugoslavia, while any possibility of injurious competition is excluded.

Other functions may be included in the competence of the Company, such as: (1) the study of old and new markets for the investigation of further possibilities of trading, (2) the elimination of the intermediary speculator, by means of the formation of a closer bond between producer and consumer, (3) collaboration with the Government, after taking the opinion

of experts, in regard to the conclusion of trade treaties, (4) approaching the Government with requests for the lowering of transport rates and the reduction of fiscal charges.

§ 3. — ACTIVITY OF THE COMPANY.

The Company was constituted at the end of 1929 and began operations during the last farming season, that of 1930. A review may be given here of its activity during the period 1 June to 1 December 1930. Since from the outset the operations



were confined to the principal cereals, wheat and maize, on account of their special importance in the economy of Yugoslavia, the Company found itself in a very difficult position, as it had to surmount a large number of obstacles in order to carry out even a part of its extensive programme. The continued decline in the price of cereals on the world market, the competition with the overseas countries and with the U. S. S. R., rendered the ports of Western Europe practically inaccessible to Yugoslav wheat. On the markets of Central Europe prices were more favourable, but the purchasing capacity was very limited. As a means of escape from the position, the Company had applied to the Government for authorisation to purchase the quantities of wheat offered by Yugoslav farmers at prices corresponding to those of Central Europe, and thus higher than the prices ruling in Western Europe, with the reserve that in the event of a fall in prices, it would have had the right to sell for future delivery the whole of the stocks not sold for cash. This proposal had been accepted by the Government, which took on itself the whole risk that might be involved in the operation. Thanks to its intervention, the Company has been able to purchase considerable quantities of wheat from the farmers, paying at times a higher price than the price ruling on the world market, and has succeeded in reselling nearly all the accumulated stocks at fairly favourable prices.

As is shown in the diagram attached, the prices of Yugoslav wheat (Backa-Banat of 78-80 kg.) during the first period of the farming season of 1930 were almost steady, there being a slight fall towards October followed by a recovery in the last two months of the year. Winnipeg wheat (No. 1 Manitoba) underwent on the contrary a steady fall until in December the pre-war level of prices was reached. It is of interest to note the shrinkage of the difference between the prices of Canadian wheat and Yugoslav wheat in this year. While in August of 1929 the difference between the prices was 120 dinars, in August 1930 it was reduced to 30 dinars, and subsequently in December 1930 the difference became one of 30 dinars in favour of Yugoslav wheat. The steady level maintained by the prices of Yugoslav wheat during the 1930 season may be noted, without however attributing special credit to the action of the Privileged Company for Export. The ascertainment of the causes of this phenomenon would require a much more careful investigation of all the factors which may affect the course of prices than can be attempted within the limits of this article. Undoubtedly it is impossible to deny that the Company had a certain influence on the course of events in this respect.

As regards the activity of the Company in the sphere of foreign trade, in the period from 1 August to 1 December 1930, it has exported half a million quintals of wheat out of a total export of 1,164,000 quintals, while in the same period of the year 1929 the export figures had been 4,168,000 quintals. The marked decrease in the 1930 export is explained in great measure, as has already been remarked, by the unfavourable situation of the world market.

As regards maize, however, the market situation was much more favourable. The Company, over the same period, exported half a million quintals of maize, out of 957,000 quintals representing the total maize export of Yugoslavia, as compared with 889,000 quintals exported in the same period of 1929.

Among other results obtained by the Company there should be noted: (1) the preparation of a scheme for the construction of elevators which should be in readiness for next season, and (2) the lowering by 20 or 30 per cent. of transport rates on agricultural products intended for export.

The importance attaching to the Company for Export appeared at the meeting held at Belgrade in November, following on the decision taken at the Warsaw Conference. At this meeting a proposal was made to all the agricultural countries of

Central and Eastern Europe which have not already Institutes for Export to create such as soon as possible. By means of an agreement between the Institutes of all these countries an attempt will be made to arrive at a regulation of trade and a stabilisation of the prices of agricultural products on the market of Central and Eastern Europe.

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